Biology is a natural science concerned with the study of life and living organisms, including their structure, function, growth, evolution, distribution, and taxonomy. Sub disciplines of biology are defined by the scale at which organisms are studied, the kinds of organisms studied, and the methods used to study them.

SECOND YEAR BIOLOGY

Objective Portion, Short Questions, Memory Tricks, Conceptual Questions, Experiment Based Questions, Labeled Diagrams

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CHAPTER NO. 15

HOMEOSTASIS

1. A check and balance mechanism requires maintaining homeostasis in the body is:
(a) Guard system (b) Move back system (c) Operation system
(d) Feedback system (e) Homeostasis

2. Series of similar effect, which leads to the enhancement of the change under consideration is:
(a) Positive feedback (b) Longitudinal feedback (c) Negative feedback
(d) Transverse feedback (e) Vertical feedback

3. Opposite effect produced in relation to change in the body fluids is:
(a) Positive feedback (b) Longitudinal feedback (c) Negative feed hack
(d) Transverse feedback (e) Vertical feedback

4. The potential energy of water molecule can be termed as:
(a) Osmotic Pressure (b) Water Pressure (c) Partial Pressure
(d) Solute Pressure (e) Oxygen Pressure

5. In case of plant cells, the water potential of cell san is termed as:
(a) Osmotic Pressure (b) Water Pressure (c) Partial Pressure
(d) Solute Pressure (e) Solvent Pressure

6. Plant cell become turgid in solution:
(a) Hypertonic (b) Hypotonic (c) Isotonic
(d) Paratonic (e) All are incorrect

7. There is a net movement of water out of the cell in solution:
(a) Hypertonic (b) Hypotonic (c) Isotonic
(d) Paratonic (e) All are incorrect

8. The plants, which are formed in fresh water habitat either partly or completely submerged, are termed as:
(a) Halophytes (b) Heterophytes (c) Hydrophytes
(d) Mesophytes (e) Xerophytes

9. The plants growing in salt marshes close to sea are termed as:
(a) Halophytes (b) Hydrophytes (c) Heterophytes
(d) Mesophytes (e) Xerophytes

10. "Water lily" is:
(a) Halophytes (b) Xerophytes (c) Hydrophytes
(d) Mesophytes (e) Hydrophytes

11. Plants living in, dry places such as deserts, steep hills, etc. and face scarcity of water is:
(a) Halophytes (b) Xerophytes (c) Hydrophytes
(d) Mesophytes (e) Hydrophytes

12. Some plants store water in large parenchymatous cells present in stem or leaves, called:
(a) Respirants (b) Translucent (c) Succulents
(d) Adjuvants (e) Hydatids

13. In Fresh water protoctists, osmoregulation takes place by:
(a) Food vacuole (b) Pseudopodia (c) Producing dilute urine
(d) Contractile vacuole (e) Mitochondria

14. In Fresh water animals like fishes, osmoregulation takes place by:
(a) Food vacuole (b) Guttation (c) Producing dilute urine
(d) Contractile vacuole (e) Producing concentrated urine

15. Animals having isotonic body fluid with no osmoregulatory mechanisms are:
(a) Osmoconformers (b) Contract conformers (c) Osmoretractors
(d) Osmodilutors (e) Osmocongeners

16. In Plants, diffusion of surplus water in vapour form through stomata is:
(a) Respiration (b) Transpiration (c) Ascent of sap (d) Transduction (e) Osmosis

17. In Plants, the loss of water in liquid form is:
(a) Succulence (b) Transpiration (c) Transduction
(d) Guttation (e) Ascent of sap

18. Concerning Ammonia (NH_3) as excretory product in animals, which statement is not correct?
(a) It is highly soluble in water
(b) It can diffuse very rapidly across the plasma membrane.
(c) It is highly toxic if remains in the organism.
(d) In Fishes ammonia is excreted through gills as ammonium ions.
(e) In Animals liver is involved in excretion of ammonia.

19. "Uric acid" is:
(a) $C_3O_5N_5H_2$ (b) $C_5O_3N_4H_4$ (c) $C_4O_6N_4H_3$ (d) $C_6O_3N_4H_2$ (e) $C_5O_4N_3H_2$

20. In Hydra, nitrogenous wastes is in the form of:
(a) Urea (b) Uric Acid (c) Ammonia (d) Bilirubin (e) Biliverdin

21. Excretion in Hydra takes place through:
(a) Simple diffusion (b) Facilitated Diffusion (c) Flame Cells
(d) Nephridia (e) Malphigian Tubules

22. Excretion in "Planaria" takes place through:
(a) Simple diffusion (b) Facilitated Diffusion (c) Flame Cells
(d) Metanephridia (e) Maiphigian Tubules

23. In Planaria, excretory fluid (Urine) is passed out in the form of sol.:
(a) Hypertonic (b) Hypotonic (c) Paratonic
(d) Isotonic (e) All are incorrect

24. Excretory and Osmoregulatory organs in Earth worm is:
(a) Malphigian tubules (b) Flame Cells (c) Metanephridia
(d) Paranephridia (e) Protonephridia

25. In Earthworm, opening to inside is:
(a) Protostome (b) Metastome (c) Nephridiopore
(d) Parastome (e) Nephrostome

26. In Earthworm, excretory opening to outside is through:
(a) Nehridiopore (b) Protodiophore (c) Metathophore
(d) Maiphigian Tubules (e) Nephiostome

27. Excretion in "Insects" takes place through:
(a) Simple Diffusion (b) Kidneys (c) Flame Cells
(d) Maiphigian Tubules (e) Metanephridia

28. Excretory organs in man:
(a) Kidney, Spleen, Gall Bladder (b) Liver, Spleen, Pancreas (c) Skin, Liver, Gill Bladder
(d) Kidneys, Lungs, Liver (e) Kidneys, Liver, Skin

29. Excess glucose is converted into glycogen in:
(a) Pancreas (b) Kidneys (c) Liver (d) Lungs (e) Gall Bladder

30. Plasma proteins like prothrombin, fibrin and globulin synthesizes in:
(a) Liver (b) Lungs (c) Pancreas (d) Duodenum (e) Kidneys

31. Cholesterol is chiefly synthesized in:
(a) Lungs (b) Duodenum (c) Pancreas (d) Kidneys (e) Liver

32. Bile is:
(a) Greyish white, alkaline fluid (b) Yellowish Green, alkaline fluid (c) Red Green, acidic fluid
(d) Bluish white, alkaline fluid (e) Greenish Brown, acidic fluid

33. Storage of Vitamins takes place in:
(a) Stomach (b) Liver (c) Kidneys (d) Pancreas (e) Spleen

34. Urinary System of man comprise of: (In order)
(a) Kidney → Ureters → Bladder → Pelvis → Urethra
(b) Kidney → Urethra → Ureters → Bladder → Pelvis
(c) Kidney → Pelvis → Ureters → Bladder → Urethra
(d) Kidney → Pelvis → Urethra → Bladder → Ureters
(e) Pelvis → Kidney → Bladder → Ureters → Urethra

35. Gland located on the top of each kidney is:
(a) Adrenal (b) Thyroid (c) Lacrimals (d) Pituitary (e) Endometrial

36. Structural and functional unit of kidney is
(a) Villus (b) Neurons (c) Nephrone (d) Glial Cells (e) Hepatocytes

37. Correct Sequence of nephron Structure:
(a) Bowman's Capsule → Distal Convoluted Tubule → Proximal Convoluted Tubule → Collecting Duct→ Loop of Henle
(b) Distal Convoluted Tubule → Bowman's Capsule → Proximal Convoluted Tubule → Loop of Henle → Collecting Duct.
(c) Bowman's Capsule → Proximal Convoluted Tubule → Collecting Duct → Loop of Henle → Distal Convoluted Thule
(d) Bowman's Capsule → Collecting Duct → Proximal Convoluted Tubule → Loop of Henle → Distal Convoluted Tubule
(e) Bowman's Capsule → Proximal Convoluted Tubule → Loop of Henle → Distal Convoluted Tubule → Collecting Duct

38. The kidney excretes ___________ liters of urine each day.
(a) 5 (b) 120 (c) 1-2 (d) 7-5 (e) 15 -20

39. Active reabsorption of the glomerular filtrate occurs in the:
(a) Proximal Convoluted Tubule (b) Loop of Henle (c) Bowman's Capsule
(d) Distal Convoluted Tubule (e) Collecting Duct

40. The permeability of the walls of the collecting ducts to water is regulated by:
(a) Diuretic hormone (b) Atrial Natriuretic factor (c) Antidiuretic hormone
(d) Parathormone (e) Aldosterone

41. The concentration of sodium ions in the body fluids is controlled by hormone called:
(a) Diuretic hormone (b) Atrial Natnuretic factor (c) Antidiuretic hormone
(d) Parathormone (e) Aldosterone

42. Kidney stones or CALCULI are mainly composed of:
(a) Calcium Bicarbonate (b) Calcium Oxalate (c) Potassium Citrate
(d) Sodium Bicarbonate (e) Mercuric Chloride

43. Method for removing kidney and urethral stones is:
(a) Lithotomy (b) Lipodystrophy (c) Leprotomy
(d) Lithotripsy (e) Hysterectomy

44. In kidney or ureteral stone removing procedure, the waves used to breakup calculi is:
(a) X-rays (b) Gamma-rays (c) Alpha-rays
(d) Beta-rays (e) Ultrasonic rays

45. In patients with renal failure, a technique used to remove water products from the blood and excess fluids from the body is:
(a) Hysterectomy (b) Dialysis (c) Endoscopy
(d) Angioplasty (e) Fluid Aspiration

46. Concerning low temperature, which statement is not correct?
(a) Low temperature is more harmful than high temperature.
(b) The plants cells increase the proportion of unsaturated fatty acids.
(c) At the level of freezing point causes ice crystal formation in the cell.
(d) In some plants ice crystals are formed in the cell wall rather than the cytosol
(e) The cytosol is super cooled below the freezing point without the formation of ice.

47. Plant cells synthesize heat shock proteins at:
(a) 10 °C or above (b) 20 °C or above (c) 40 °C or above
(d) 60 °C or above (e) 100 °C or above

48. Poikilotherms Include all except:
(a) Invertebrates (b) Fishes (c) Amphibia
(d) Reptiles (e) Mammals

49. The hypothalamus is set at a particular temperature called:
(a) Cool point (b) Set point (c) Hot point
(d) Feedback point (e) Control point

50. Temperature set point of a man above 98.6 °F is termed as:
(a) Hypertension (b) Pyogenic (c) Progenic
(d) Pyrexia (e) Hypyerexia

51. It does not happen during regulation of cold temperature:
(a) Sweating (b) Shivering (c) Hair erection
(d) Vasco constriction (e) Subcutaneous fat accumulation

52. The incidence of calcium phosphate stones in kidney:
(a) 10% (b) 15% (c) 20% (d) 30%

53. Which of the following part of plant is excretophore?
(a) Stem (b) Roots (c) Leaves (d) Flowers

54. Reptiles are included in:
(a) Homeotherms (b) Endotherm (c) Ectotherm (d) Hetrotherms

55. Metabolism of purine and pyrimidineproduces significance amount of:
(a)Creatinin (b)Creatine (c)Xanthin (d)Trimethylamine oxide

56. Animals excreting ammonia are called:
(a)Ureotelic (b)Uricotelic (c)Ammonotelic (d)Excretotelic

57. Earthworm has tubular excretory system called:
(a)Prenephredia (b)Protonephredia (c)Mesonephredia (d)Metanephredia

58. Excretory product that requires minimum loss of water for its removal is ___________.
(a)Urea (b)Uric Acid (c)Creatinin (d)Ammonia

59. _______ is mesophyte plant.
(a) Cacti (b) Hydrilla (c) Brassica (d) Kikar

60. Major homeostatic function of liver is storage of:
(a) Bile (b) Cholesterol (c) Urea (d) Iron

61. Bats do not regulate their body temperature in narrow range is:
(a) Endotherm (b) Homeotherm (c) Heterotherm (d) Poikilotherm

62. Fishes retain which of the following chemical to be protected against urea?
(a) Allantoin (b) Creatine (c) Xanthin (d) Trimethylamine oxide

63. Glomerulus circulate blood through capsule as it arrives through:
(a) Efferent Arterioles (b) Vasa recta (c) Afferent Arterioles (d) Peritubular Capillaries

64. Uric Acid is produced from:
(a) Amino Acid (b) Nucleic Acid (c) Fatty Acid (d) Proteins

65. The structural and functional relationship between excretory and nutritive system is present in:
(a) Planaria (b) Earthworm (c) Cnidaria (d) Insects

CHAPTER NO. 16

SUPPORT AND MOVEMENT

1. Cytoplasmic streaming is called:
(a) Cytosis (b) Cyclosis (c) Cyto-flow (d) Cytomycosis (e) Cycling

2. Protoplasm possesses special characteristics of due to change in environment.
(a) Irritability (b) Dispensability (c) Trophism (d) Extremitism (e) Irritability

3. The outer most layers of thin walled cells of young stem is:
(a) Endodermis (b) Cortex (c) Epidermis (d) Exodermis (e) Medulla

4. Uniformly thick, heavily lignified secondary walls, which give strength to the plant body, are tissues:
(a) Parenchyma (b) Collenchymas (c) Sclerenchyma (d) Fibers (e) All

5. Simple living tissue, elongated, irregularly thickened walls is:
(a) Parenchyma (b) Collenchymas (c) Sclerenchyma (d) Fibers (e) All

6. Tissues, which are formed by the activity of vascular cambium and cork cambium are called:
(a) Simple (b) Compound (c) Primary (d) Secondary (e) Tertiary

7. Elongated cells with tapered ends, tough and strong but flexible, are all characteristics of:
(a) Secondary tissues (b) Parenchyma (c) Collenchymas (d) Sclerenchyma (e) Fibers

8. The growth in the apex of young stem takes place in zigzag manner due to an alternate change in growth rate on opposite site of the apex. This movement is called:
(a) Nutation (b) Mutation (c) Vibration (d) Nastic (e) Turgor

9. When movement occurs due to faster growth on the upper side of the organ is known as:
(a) Nutation (b) Epinastic (c) Hyponastic (d) Paranastic (e) Paratonic

10. When movement occurs due to faster growth on lower surface of the growing organ, it is known as:
(a) Nutation (b) Epinastic (c) Hyponastic (d) Paranastic (e) Paratonic

11. Movements which occur due to external stimuli are known as:
(a) Nutation (b) Nastic (c) Turgor (d) Paratonic (e) Tropic

12. Movement occurs due to change in turgidity and size of cells as a result of loss or gain of water called:
(a) Nutation (b) Nastic (c) Turgor (d) Induced (e) Tropic

13. Paratonic movements are also known as:
(a) Nutation (b) Epinastic (c) Paranastic (d) Induced (e) Tropic

14. Growth responses that result in curvatures of whole plant organs towards or away from stimuli is:
(a) Nutation (b) Tropism (c) Turgic movement (d) Paratonicity
(e) Epinastic movement

15. Curvature movement of plant in response to touch stimulus is:
(a) Geotropism (b) Chemotropism (c) Hydrotropism
(d) Phototropism (e) Thigmotropism

16. Movement caused due to stimuli of touch is:
(a) Haptonastic (b) Hygronastic (c) Photonastic (d) Paranastic (e) Epinastic

17. Growth movement in plants is mainly controlled by phytohormone called:
(a) Ascorbic Acid (b) Neuroxins (c) Auxins (d) Phytoxins (e) Cytoxins

18. Simplest skeleton found in soft bodies invertebrates is ________ skeleton.
(a) Appendicular (b) Hydrostatic (c) Endo- (d) Axial (e) Exo-

19. Hydrostatic skeleton is found in:
(a) Molluscs (b) Octopus (c) Earth Worms (d) Humans (e) Crabs

20. Molluscs have an exoskeleton made up of:
(a) Silica (b) Chitin (c) Cuticle (d) Liquid Jelly (e) Lime

21. The most complex types of exoskeleton is found in:
(a) Molluscs (b) Mammals (c) Arthropods (d) Jelly Fish (e) Octopus

22. The process of shedding of exoskeleton and make up of new and Larger one is:
(a) Ecdysis (b) Acanthosis (c) Ecthosis (d) Necrosis (e) Moulding

23. Exoskeleton Is:
(a) Living. Growing (b) Non-living, Growing (c) Living, Non-Growing
(d) Non-living, Non-Growing (e) May be living or non-living, but not growing

24. Endoskeleton is composed of:
(a) Bones and Muscles (b) Blood vessels and ligaments (c) Cartilages arid Tendons
(d) Tendons and Bones (e) Bones and Cartilages

25. An adult human endoskeleton consists of bones.
(a) 98 (b) 106 (c) 159 (d) 206 (e) 265

26. Axial skeleton includes:
(a) Skull, Pelvic girdles, Bones of arms and legs (b) Skull, Sternum, Pelvic and Pectoral girdles
(c) Skull, Sternum, Vertebrae and ribs (d) Skull, Ribs, Bones of arms and legs
(e) Ribs, Sternum, Vertebrae, Pelvic Girdle

27. A human endoskeleton is about ______ % of the total body weight.
(a) 5 (b) 10 (c) 12 (d) 15 (e) 18

28. Appendicular skeleton includes:
(a) Ribs, Sternum, Vertebrae
(b) Arms and Legs Bones, Pelvic and Pectoral Girdle
(c) Sternum, Bones of arms and legs, Vertebrae (d) Ribs, Vertebrae, Pelvic and Pectoral Girdle
(e) Pelvic Girdle, Ribs, Sternum, Bones of Arms and Legs

29. Spinal cord consists of vertebrae.
(a) 18 (b) 22 (c) 30 (d) 33 (e) 36

30. Brain box is made up of ________ bones to protect the brain.
(a) Four (b) Six (c) Seven (d) Eight (e) Ten

31. Each pectoral girdle consists of:
(a) Humenus and Radius (b) Calvide and Scapula (c) Sternum and Ribs
(d) Tibia and Ulna (e) Sternum and Scapula.

32. Each of the human fore limb (upper limb) contains bones.
(a) 12 (b) 20 (c) 30 (d) 35 (e) 38

33. Bone which forms a ball and socket joint with scapula is:
(a) Femur (b) Humerus (c) Radioulna (d) Fibula (e) Tibia

34. Number of Carpel bones in each wrist is:
(a) Four (b) Five (c) Six (d) Seven (e) Eight

35. From the palm extend fingers containing 14 small bones called:
(a) Phalanges (b) Carpals (c) Metacarpals (d) Patella (e) Tarsals

36. Each pelvic girdle is formed by the fusion of 3 bones called:
(a) Femur, Sternum, Fibula (b) Femur, Tibia, Fibula (c) Ilium, Ischium, Pubis
(d) Tibia, Fibula, Patcila (e) Ilium, Tibia, Ischium

37. The longest and strongest bone in the body is:
(a) Humerus (b) Femur (c) Sternum (d) Scapula (e) Patella

38. Cells of the bone are called:
(a) Hepatocytes (b) Melanocytes (c) Osteocytes (d) Chondrocytes (e) Chart

39. Cells of the cartilages are called:
(a) Hepatocytes (b) Melanocytes (c) Osteocytes (d) Chondrocytes (e) Glial

40. Joint present in elbow is:
(a) Ball & Socket (b) Hinge (c) Pivot (d) Sliding (e) Gliding

41. Ankle or wrist joint in an example of __________ joint.
(a) Ball & Socket (b) Hinge (c) Pivot (d) Sliding (e) Gliding

42. Deformity of the joint of two vertebrae particularly of the neck where the space between the two adjacent vertebrae narrow is:
(a) Rickets (b) Disc Slip (c) Spondylosis (d) Arthritis (e) Sciatica

43. Condition in which a joint becomes swollen, painful and immovable is:
(a) Microcephaly (b) Disc Slip (c) Spondylosis (d) Arthritis (e) Sciatica

44. Number of muscles present in a human body is:
(a) 200 (b) 300 (c) 400 (d) 600 (e) 900

45. Some skeletal muscles terminate into a tough, non-elastic tissue called:
(a) Cartilages (b) Ligaments (c) Tendons (d) Blood vessels (e) All

46. Human eye muscle contract in:
(a) 0.001 sec (b) 0.01 sec (c) 1 sec (d) 0.01 min (e) 1 min

47. Sudden involuntary contraction of striated muscles which is caused by low level of calcium in the blood:
(a) Tetany (b) Fatigue (c) Stroke (d) Thrombosis (e) Ecdysis

48. Locomotion in Paramecium is brought about by:
(a) Pseudopodia (b) Cilia (c) Flagella (d) Rhizoid (e) Foot

49. Locomotion in Euglena is brought about by:
(a) Pseudopodia (b) Cilia (c) Flagella (d) Setae (e) Foot

50. Locomotion in Snail is brought about by:
(a) Cilia (b) Flagella (c) Foot (d) Tube Feet (e) Legs

51. Each myosin filament is surrounded by _______ actin filaments.
(a) 4 (b) 6 (c) 8 (d) 12 (e) 14

52. Bones of the skull are joined by.
(a) Fixed joints (b) Sliding joints (c) Pivot joints
(d) Hinge joints (e) Partially moveable joints

53. The protein filament which binds calcium:
(a) Actin (b) Myosin (c) Troponin (d) Tropomyosin

54. Which one of the following is plantigrade?
(a) Rabbit (b) Monkey (c) Horse (d) Goat

55. Twisting around the actin chain there are two strands of another protein:
(a) Myosin (b) Tropomyosin (c) Troponin (d) Creatinine

56. The heartwood accumulates the chemicals:
(a) Cellulose (b) Abscisins (c) Chitin (d) Resins

57. Spontaneous movements due to internal causes are called:
(a) Autonomic (b) Paratonic (c) Tactic (d) Tropic

58. The fusion of four posterior pelvic vertebrae is ______
(a) Cervical (b) Coccyx (c) Lumber (d) Sacrum

59. Cambium is an example of __________ meristem.
(a) Apical (b) Intercalary (c) Lateral (d) Apex

60. Fibers, Sclereids and vessels are three types of _______
(a) Collenchymas (b) Sclerenchyma (c) Parenchyma (d) Cambium

61. Bone dissolving cells are called:
(a) Osteoblasts (b) Stem cells (c) Osteocytes (d) Osteoclasts

62. A bone which connect scapula with sternum:
(a) Humerus (b) Ischium (c) Pubis (d) Clavicle

63. Action of venous fly trap is an example of:
(a) Nyctinasty (b) Haptonasty (c) Hyponasty (d) Photonasty

64. Which of these are long, Cylindrical and exist as bundle caps?
(a) Sclereids (b) Vessels (c) Trachea (d) Tracheids

65. Leaves go to sleep position when turgor pressure decreases in the lower side of:
(a) Pelvis (b) Pulvinus (c) Callus (d) Pubis

67. Cramp is also known as:
(a) Tetany (b) Tetanic contraction (c) Tetanus (d) Muscle fatigue

68. An increase in plant girth due to activity of vascular cambium is called:
(a) Primary growth (b) Open growth (c) Secondary growth (d) Tertiary growth

CHAPTER NO. 17

COORDINATION AND CONTROL

1. Mechanism of control and co-ordination, found only in multicellular animals, faster in action, having localized effects, involves in electrical and chemical transmission is:
(a) Chemical control (b) Physical control (c) Nervous control
(d) Respiratory control (e) Psychological control

2. Plants response to light due to the presence of a hormone in its growing tip, the hormone was named:
(a) Auxin (b) Gibberallin (c) Neuroxin (d) Phytoxin (e) Cytoxin

3. The movements in plants occur in response to certain stimuli and the direction of responses related to the direction of stimulus. Such responses are called:
(a) Photoperiodism (b) Biorhythm (c) Reflex Action (d) Autonomy (e) None

4. Living organisms when repeat their biological or behavioral activities at regular intervals, this behavior is:
(a) Biorythms (b) Photoperiodism (c) Reflex Action (d) Autonomy (e) Tropism

5. The phenomenon in which the influence of day length on plants is studied is called:
(a) Geotropism (b) Phytoperiodism (c) Thigmotropism
(d) Photoperiodism (e) Reflex Action

6. Principal naturally occurring "auxins" of higher plants is:
(a) Acetic Acid (b) Indole Acetic Acid (c) Ethyl Acetic Acid
(d) Ribonucleic Acid (e) Naphthalene Acetic Acid

7. Which one of the following is not the role of Auxins?
(a) Cell division and Cell enlargement (b) Initiation of roots (c) Abscission
(d) Apical dominance (e) Seed dominance

8. Gibberellins inject rice seedlings and produce a disease called __________ seedling.
(a) Foolish (b) Apical (c) Lateral (d) Silent (e) Rubbish

9. Cytokinins are originally obtained from _________ milk.
(a) Rice (b) Coconut (c) Almond (d) Dare (e) Rose

10. One of the naturally occurring cytokinin is:
(a) Kinetin (b) Creatin (c) Zeatin (d) Reatin (e) Cytokin

11. Which one of the following is synthetic cytokinin?
(a) Creatin (b) Zeatin (c) Cytokin (d) Reatin (e) Kinetin

12. The most important role of ethane (a gas) is:
(a) It Triggers Ripening of fruit (b) It break seed dormancy (c) Parth enocarpy
(d) Initiation of Roots (e) It causes stomata to close

13. Special kind of animal cell which can generate and conduct electric current is:
(a) Nephon (b) Neuroglial cells (c) Myocytes (d) Histiocytes (e) Neurons

14. Cell body of neuron is called:
(a) Roma (b) Koma (c) Soma (d) Neuroma (e) Glioma

15. Cell body of neurons contains "NISSL SUBSTANCE" which consists of:
(a) Mitochondria (b) Lysosomes (c) Peroxisomes
(d) Nucleolus (e) Ribosomes

16. Axon originates from a pyramid like area of soma called:
(a) Node of Ranvier (b) Axon – Halloick (c) Axon -Buttock
(d) Axon –Takeoff (e) Myelin Sheath

17. Neurons takes commands of the control centre to the effectors are:
(a) Sensory Neurons (b) Neuroglial Cells (c) Motor Neurons
(d) Inter Neurons (e) Sub-sensory Neurons

18. Resting membrane potential of neurons Is:
(a) - 30 mV to- 45 mV (b) - 20 mV to- 50 mV (c) -45 mV to -65 mV
(d) - 40 mV to- 90 mV (e) -50 mV to -85 mV

19. Neuron depolarizes at
(a) – 65 mV (b) - 30 mV (c) -40 mV (d) + 40 mV (e) +65 mV

20. The region where the impulse moves from one neurons to another is:
(a) Axon-Halloick (b) Synapse (c) Node of Ranvier (d) Myelin Sheath (e) Soma

21. Automatic, involuntary responses which occur either due to internal or external stimuli are:
(a) Synapses (b) Action Potential (c) Reflex Action
(d) Resting Membrane Potential (e) Nerve impulse

22. In Hydra, the nervous system consists of:
(a) Transverse nerves (b) Nerve cord (c) Forebrain (d) Nerve net (e) Nerve rod

23. The largest and most complex part of human brain is:
(a) Thalamus (b) Hypothalamus (c) Medulla Oblongata (d) Cerebellum (e) Cerebrum

24. The activity of two cerebral hemispheres is co-ordinated by:
(a) Corpus Callosum (b) Superior Sagittal Sinus (c) Corpus Cavernous
(d) Vernix Cascosa (e) Limbic System

25. The diencephalons consists of:
(a) Mid Brain and Cerebellum (b) Medulla Oblongata and Mid Brain (c) Thalamus and Pons
(d) Thalamus and Limbic System (e) Cerebral Lobes and Hypothalamus

26. Part of the brain important in regulation of homeostasis is:
(a) Amygdala (b) Hypothalamus (c) Cerebellum (d) Hippocampus (e) Midbrain

27. The hippocampus is involved in:
(a) Perception of pain and pleasure (b) Regulation of pituitary gland (c) Long term memory
(d) Short term memory (e) Intelligence and Reasoning

28. Breathing, heartbeat, blood pressure, coughing, swallowing are all under the control of:
(a) Cerebellum (b) Medulla Oblongata (c) Mid Brain (d) Thalamus (e) Pons

29. The brain-stem consists of:
(a) Thalamus, Hypothalamus, Amygdala (b) Cerebrum, Cerebellum, Thalamus
(c) Medulla Oblongata, Pons, Cerebellum (d) Medulla Oblongata, Mid Brain, Cerebellum
(e) Medulla Oblongata, Mid Brain, Pons

30. Peripheral Nervous System consists of pairs of Spinal nerves.
(a) 12 (b) 19 (c) 29 (d) 31 (e) 36

31. Receptors detect sound, motion, touch, pressure are called:
(a) Thermoreceptors (b) Chernoreceptors (c) Mechanoreceptors
(d) Photoreceptors (e) Painreceptors

32. Receptors detect tissue damage are called:
(a) Thermoreceptors (b) Chernoreceptors (c) Mechanoreceptors
(d) Photoreceptors (e) Painreceptors

33. Aortic body and carotid body, both are chemoreceptor's which are sensitive to in the blood
(a) O_2 and CO_2 (b) CO_2 and H^+ (c) O_2 and H^+
(d) NH_3 and H^+ (e) O_2, CO_2 and NH_3

34. Brain disorder caused either by degeneration or damage to nerve tissue within the basal ganglia of the brain is:
(a) Parkinson's disease (b) Alzheimer's disease (c) Schizophrenia
(d) Psychosis (e) Dementia

35. Most effective drug in Parkinson's disease is:
(a) Carbidopa (b) Amamidine (c) Bromocriptine
(d) Levodopa (e) Benztropine

36. Parkinson's disease is due to the deficiency of:
(a) Epinephrine (b) Nor-epinephrine (c) Histamine
(d) Serotonin (e) Dopamine

37. Progressive degeneration of neurons of brain causes loss of memory is:
(a) Parkinson's disease (b) Alzheimer's disease (c) Huntington's disease
(d) Schizophrenia (e) Psychosis

38. Tendency of recurrent seizures or temporary alteration in one or more functions is:
(a) Psychosis (b) Alzheimer's disease (c) Epilepsy
(d) Diphtheria (e) Schizophrenia

39. Glucagon is ___________ hormones.
(a) Short chain amino acids (b) Long chain amino acids (c) Modified amino acids
(d) Steroid (e) All are incorrect

40. Estrogen and Progesterone are _________ hormone.
(a) Short chain amino acids (b) Long chain amino acids (c) Modified amino acids
(d) Steroid (e) All are incorrect

41. Modified amino acid hormone includes:
(a) Insulin (b) Oxytocin (c) Glucagon
(d) Anti-Diuretic Hormone (e) Thyroxin

42. Important part of the brain which serves as connecting link between nervous and endocrine system is:
(a) Thalamus (b) Cerebellum (c) Hypothalamus
(d) Hippocampus (e) Medulla Oblongata

43. “Master gland" was former name of:
(a) Pituitary gland (b) Adrenal gland (c) Thyroid gland
(d) Parathyroid gland (e) Pineal gland

44. The median pituitary lobe secretes.
(a) TSH (Thyroid Stimulating hormone) (b) FSH (Follicular Stimulating hormone)
(c) ACTH (Adrenocorticotrophin hormone) (d) MSH (Melanocyte Stimulating hormone)
(e) None

45. The posterior pituitary lobe secretes:
(a) TSH (b) FSH (c) ADH (d) MSH (e) LH

46. To induce labour hormone is given:
(a) Growth (b) Thyroid (c) Antidiuretic (d) Oxytocin (e) Cortisol

47. The over-production of STH (Somatotrophin) after adult-hood results in:
(a) Acromegaly (b) Gigantism (c) Dwarfism
(d) Myxedema (e) Cretinism

48. Hypothyroidism results in adults.
(a) Acromegaly (b) Gigantism (c) Dwarfism
(d) Myxedema (e) Cretinism

49. Excessive secretion of STH during childhood results in:
(a) Acromegaly (b) Gigantism (c) Dwarfism
(d) Myxedema (e) Cretinism

50. If hypothyroidism occurs in early age, it causes:
(a) Acromegaly (b) Gigantism (c) Dwarfism
(d) Myxedema (e) Cretinism

51. Hormone Involved In glucose metabolism and are produced during anxiety, fever and diseases is:
(a) Groh hormone (b) Antidiuretic hormone (c) Cortisol
(d) Aldosterone (e) Androgens

52. Over production of Cortisol results in:
(a) Crohn's Syndrome (b) Curshing Syndrome (c) Down Syndrome
(d) Addison's Disease (e) Cretinism

53. Deficient production of cortisol due to the destruction of adrenal gland is:
(a) Crohn's Syndrome (b) Cushing Syndrome (c) Klienfelter Syndrome
(d) Addison's Disease (e) Myxedema

54. Hormone sometimes given by injection as an emergency treatment in cardiac arrest, anaphylactic shock and acute asthma attack is:
(a) Aldosterone (b) Epinephrine (c) Insulin (d) Cortisol (e) Thyroid

55. The scientific study of the nature of behaviour and its ecological and evolutionary significance its natural setting is called:
(a) Ethology (b) Etiology (c) Ecthyology (d) Entomology (e) Ecology

56. Innate (Instinctive) Behaviour includes:
(a) Classic conditioning (b) Imprinting (c) Fixed action pattern
(d) Operant Conditioning (e) Insight Learning

57. Type of learned behaviour in which animal stops responding to repeated stimulus, which is neither beneficial nor harmful is:
(a) Imprinting (b) Fixed action pattern (c) Operant Conditioning
(d) Habituation (e) Insight Learning

58. Solving a problem without trial and error learning is called:
(a) Imprinting (b) Latent Learning (c) Operant Learning
(d) Habituation (e) Insight Learning

59. Learning which is not associated with a particular stimulus and is not normally rewarded or punished but utilized at a later Lime is called:
(a) Habituation (b) Imprinting (c) Classic Conditioning
(d) Operant Conditioning (e) Latent Learning

60. Orientation behaviour in which animal exhibits random movement to 3 particular stimulus is:
(a) Taxes (b) Reflexes (c) Kinases
(d) Fixed Action Pattern (FAP) (e) Learned behavior

61. Match diabetes insipidus with one of the following.
(a) Oxytocin (b) Vassopressin (c) Insulin (d) Glucagon

62. Kohler used Chimpanzee to prove:
(a) Habituation (b) Imprinting (c) Latent Learning (d) Insight Learning

63. The corpuscles situated quiet deep inside the body is:
(a) Meissner's (b) Pacinian's (c) Nissle's (d) White Blood Cells

64. The simplest form of learning is:
(a) Imprinting (b) Habituation (c) Insight Learning (d) Latent Learning

65. The hormone secreted by mucosa of the pyloric region of the stomach is:
(a) Gastrin (b) Secretin (c) Estrogen (d) Progesterone

66. The type of learning involves diminution of response with repeated stimuli:
(a) Imprinting (b) Habituation (c) Latent Learning (d) Insight Learning

67. Gastrin is hormone produced by:
(a) Adrenal (b) Pancrease (c) Gut (d) Liver

68. __________ is applied to rubber plant to stimulate flow of latex.
(a) Abcisic Acid (b) Gibberellin (c) Ethene (d) Auxin

69. Which one of the following produce in excess then leads abnormal development called acromegaly?
(a) TSH (b) ACTH (c) MSH (d) STH

70. Rodents respond to alarm calls by others in their group is an example of behavior:
(a) Imprinting (b) Habituation (c) Conditioning (d) Latent learning

71. Nociceptors produce the sensation of:
(a) Touch (b) Warmth (c) Pressure (d) Pain

72. Vassopressin (Antidiuretic hormone) and oxytocin are:
(a) Proteins (b) Amino acid and Derivatives
(c) Polypeptides (d) Steroids

CHAPTER NO. 18

REPRODUCTION

1. Asexual reproduction in plants, which produce seeds without that flowers being fertilized is called:
   (a) Sporulation (b) Vegetative Propagation (c) Apomixis
   (d) Molding (e) Parthenogenesis

2. A group of genetically identical offspring produced by asexual method called:
   (a) Spore (b) Clone (c) Trait (d) Crop (e) Bud

3. If the two fusing gametes are different in size or shape and their fusion lead to formation of new, individual, then this is called:
   (a) Isogamy (b) Homogamy (c) Monogamy (d) Heterogamy (e) Oogamy

4. Production of two different types of gametes, one is male and monk, other is female non-motile having stored food material is called:
   (a) Isogamy (b) Homogamy (c) Oogamy (d) Heterogamy (e) All

5. The unisexual flower are called:
   (a) Carpellate (b) Sepellate (c) Bipinnate (d) Isogametous (e) Pinnate

6. The embryo and its food supply are enclosed by a .
   (a) Cell Wall (b) Seed-coat (c) Rot-sheath (d) Embryo-wall (e) Stigma

7. The embryo of a grass seed is enclosed by a sheath consisting of a:
   (a) Calatropis (b) Rhizoids (c) Coleorhiza (d) Scotellum (e) Coleoptile

8. Kind of inflorescence in which flowers are sessile and unisexual is:
   (a) Peduncle elongated (b) Peduncle Flattened (c) Spadix
   (d) Spikelet (e) Catkin

9. Inflorescence in which flowers have pedicels of unequal length is called:
   (a) Peduncle flattened (b) Catkin (c) Spadix (d) Corymb (e) Umbel

10. Cymose inflorescence includes:
    (a) Monochasial (b) Spadix (c) Corymb (d) Peduncle flattened (e) Catkin

11. Dormant means.
    (a) Awakening (b) Sleeping (c) Frightening
    (d) Breaking (e) Supporting

12. Maize-grain is an example of:
    (a) Parthenocarpic fruits (b) Epigeal Germination (c) Hypogeal Germination
    (d) Viviparous Germination (e) Oviparous Germination

13. Germination present in castor oil seed:
    (a) Viviparous (b) Hypogeal (c) Oviparous (d) Ovo-viviparous (e) Epigeal

14. Germination found in "Coconut", "Palms" is:
    (a) Viviparous (b) Hypogeal (c) Oviparous (d) Ovo-viviparous (e) Epigeal

15. Asexual reproduction in which pieces of parent body split off and grow into new complete organisms Is:
(a) Binary Fission (b) Multiple Fission (c) Budding
(d) Parthenogenesis (e) Fragmentation

16. Type of reproduction which is neither strictly asexual nor sexual is:
(a) Budding (b) Regeneration (c) Parthenogenesis
(d) Cloning (e) Fission

17. Type of asexual reproduction common in some insects like honey-bees, ants and wasps is called:
(a) Fission (b) Budding (c) Fragmentation
(d) Regeneration (e) Parthenogenesis

18. Animals which have only one type of gonads are said to be:
(a) Dioecious (b) Bisexual (c) Monoecious (d) Hermaphrodites (e) All

19. Process of cell division by which eggs are formed from germ cells present in the ovaries, is called:
(a) Gametogenesis (b) Soniatogenesis (c) Spermatogenesis
(d) Oogenesis (e) Mating

20. The animals who don't lay eggs but retain them inside their body, where they are fertilized and develop, are called:
(a) Heterophrodite (b) Hermaphrodite (c) Viviparous
(d) Oviparous (e) Ovo-viviparous

21. The animals in which female gametes called eggs/ova are produced in the ovaries located inside the body of a female are:
(a) Heterophrodite (b) Hermaphrodite (c) Viviparous
(d) Oviparous (e) Ovo-viviparous

22. Regarding reproductive organs of a human male, which one is the correct order?
(a) Seminiferous tubules → Epididymis → Vas Deferens → Urethra
(b) Epididymis → Vas Deferens → Seminiferous Tubules → Urethra
(c) Urethra → Vas Deferens → Epididymis → Seminiferous tubules
(d) Seminiferous Tubules → Epididymis Urethra → vas Deferens
(e) Vas Deferens → Seminiferous Tubules → Urethra → Epididymis

23. In male, the external genitalia consists of:
(a) Seminiferous tubule and testis (b) Testis and Urethra (c) Vas Deferens and Epididymis
(d) Penis and Scrotum (e) Testis and Scrotum

24. Concerning Female Reproductive tract, which statement is coned?
(a) Ovaries Uterus → Fallopian Tube → Vagina → Cervix Vulva
(b) Ovaries → Vagina → Uterus → Vulva → Fallopian tube → Cervix
(c) Ovaries → Uterus → Fallopian Tube → Cervix → Vulva → Vagina
(d) Fallopian tube → Ovaries → Uterus Cervix → Vagina → Vulva
(e) Ovaries → Fallopian tube → Uterus → Cervix → Vagina → Vulva

25. The end of fertility in a human female is:
(a) Menstruation (b) Ovulation (c) Menarche (d) Menopause (e) Puberty

26. Ovulation in initiated by:
(a) FSH (b) LH (c) Estrogen (d) Progesterone (e) STH

27. Testes produce:
(a) Progesterone (b) Estrogen (c) Testeron (d) Yolk sac (e) FSH

28. Ovulation occurs at day:
(a) 5 (b) 9 (c) 12 (d) 14 (e) 19

29. The longest phase of menstrual cycle is:
(a) Menstrual phase (b) Follicle phase (c) Ovulation phase
(d) Corpus Luteum phase (e) All are incorrect

30. Corpus Luteum produces:
(a) Progesterone (b) LH (c) Estrogen (d) Androgens (e) FSH

31. Fertilization in human being is more commonly called:
(a) Conception (b) Misconception (c) Menstruation (d) Ovulation (e) Labour

32. The period starting from conception up to the birth of a baby is called:
(a) Conception (b) Gestation (c) Gastrulation (d) Implantation (e) Labour

33. Parthenogenesis is a type of reproduction which requires:
(a) One gamete (b) Two gametes (c) Two eggs (d) Two-parent (e) No parent

34. A clone exactly resembles with:
(a) Mother (b) Egg donor (c) Diploid nucleus donor
(d) Haploid nucleus recipient (e) All are incorrect

35. "Syphilis" is caused by:
(a) Neisseria gonorrhoeae (b) Treponema pallidum (c) Herpes simplex
(d) Chlamydia trachomatis (e) Rubella Virus

36. The organic connection between a developing embryo and its mother is called:
(a) Umbilical cord (b) Amnion (c) Chorion (d) Mammary glands (e) Cervix

37. During a female's fertile years, only about _____________ of oocytes develop into mature eggs.
(a) 250 (b) 350(c) 450 (d) 660(e) 850

38. An animal which possess both functional testes and ovaries are called:
(a) Monoecious (b) Unisexual (c) Dioecious
(d) Heterophrodite (e) Ovoviviparous

39. Lower mammal undergo seasonal cycle.
(a) Ovulatory (b) Uterine (c) Ovarian
(d) Oestrogenous (e) Oestrous

40. “Estrogen" is produced by:
(a) Endometrium (b) Myometrium (c) Ovary (d) Fallopian tube (e) Cervix

41. The first convoluted part of vas deferense is called:
(a) Epididymis (b) Penis (c) Scrotum (d) Sperm

42. When will you call embryo as fetus?
(a) After two months (b) After three months (c) After four months (d) After five months

43. When the sperms are in the tubules then protection and nourishment is provided by:
(a) Sterol Cells (b) Interstitial Cells (c) Epididymis (d) Seminiferous Tubules

44. The ovary under the influence of FSH also produces a hormone i.e.:
(a) Progesterone (b) Estrogen (c) Oxytocin (d) Corticosteroids

45. Which hormone in male stimulates interstitial cells of testis to secrete testosterone?
(a) TSH (b) FSH (c) ICSH (d) LH

46. Corpus leuteum secretes a hormone called:
(a) Estrogen (b) Progesterone (c) Oxytocin (d) Testosterone

47. In human female, the discharge of blood and cell debris called:
(a) Ovulation (b) Abortion (c) Menstruation (d) Secretion

48. The duration of gestation period in human female is usually:
(a) 250 days (b) 260 days (c) 270 days (d) 280 days

49. A light sensitive pigment is plant cell:
(a) Cytochrome (b) Phytochrome (c) Photochrome (d) Auxin

50. Ovaviviparityis shown by:
(a) Reptile (b) Bird (c) Duck bill platypus (d) Humans

51. Which one secretes liquid to protect and nourish sperm cells?
(a) Corpus leuteum (b) Sertoli cells (c) Placenta (d) Epididymis

52. Which is not a stimulus to release oxytocin?
(a) Distention of cervix (b) Decrease in progesterone level
(c) Neural stimulus during parturition (d) High level of Calcium ions

53. Example of day neutral plant is:
(a) Tomato (b) Soya bean (c) Xanthium (d) Chrysanthemum

54. Corpus leuteum secrete a hormone called:
(a) FSH (b) LH (c) Progesterone (d) Estrogen

55. Reptile and birds are:
(a) Viviparous (b) Oviparous (c) Ova-viviparous (d) Marsupial

56. In nature P_{730} to P_{660} conversion occur in the:
(a) Day (b) Red Light (c) Dark (d) Dawn

57. Which of the following is not a stimulus to release oxytocin?
(a) Distension of cervix (b) Decrease in progesterone level
(c) Neural stimulus during parturition (d) High level of calcium ions

CHAPTER NO. 19

GROWTH AND DEVELOPMENT

1. The study of a process of progressive changes through which a fertilized egg passes before it assumes an adult form is:
(a) Histology (b) Embryology (c) Entomology
(d) Ecology (e) Ecdysis

2. Process in which plants develop, results in the formation of a seed which become a new plant is:
(a) Plasmolysis (b) Deplasmolysis (c) Fertilization
(d) Germination (e) Cytoplasmic localization

3. In the higher plants, growth is confined to certain regions called the:
(a) Meristems (b) Cyclostems (c) Peristems
(d) Mesostems (e) Epistems

4. The increase in thickness of stems and roots due to activity of lateral meristems is called:
(a) Primary Growth (b) Secondary Growth (c) Tertiary Growth
(d) Quaternary Growth (e) All are incorrect

5. Secondary growth is the increase in diameter of stems and roots due to activity of secondary meristem:
(a) Epidermis (b) Phloem (c) Cambium
(d) Cortex (e) Xylem

6. The phase restricted to the tips of roots and shoots, where the cells constantly divided & increase, in number is:
(a) Formative Phase (b) Elongation Phase (c) Maturation Phase
(d) Differentiation Phase (e) Permanent Phase

7. Most of the enzyme work optimally in between:
(a) 5 °C to 10 °C (b) 10 °C to 15 °C (c) 18 °C to 28 °C
(d) 28 °C to 30 °C (e) 25 °C to 37 °C

8. Plant hormone "AUXIN" is:
(a) Acetic Acid (b) Ethyl Acetic Acid (c) Methyl acetic Acid
(d) Indole Acetic Acid (e) Mendelic Acetic Acid

9. Most common correlation found in plant is:
(a) Seed dominance (b) Shoot dominance (c) Apical dominance
(d) Peduncle dominance (e) Androecium dominance

10. The removal of apex releases the lateral buds from apical dominance is called:
(a) Inhibitory Effects (b) Compensatory Effects (c) Compression Effects
(d) Comprehension Effect (e) Conversion Effects

11. In higher plants, the phase lies behind the region of elongation is:
(a) The Formative Phase (b) Elongation Phase (c) Maturation Phase
(d) Ovulation Phase (e) Degeneration Phase

12. Concerning affect of intensity of light on Growth of plants, which statement is not correct?
(a) High intensity of light destroys the chlorophyll.
(b) Quality of light has no influence on growth rate.
(c) Duration of light affects the growth of vegetative and reproductive structures.
(d) Without light, photosynthesis cannot take place.
(e) Blue light enhances the cell division but retard cell enlargement.

13. Vernalization is related to:
(a) Very High Temperature (b) High Temperature (c) Moderate Temperature
(d) Low Temperature (e) Optimum Temperature

14. Promotion of flowering by a cold treatment given to the imbibed seeds or young plants is:
(a) Vernalization (b) Imbibition (c) Photoperiodism
(d) Apoptosis (e) Germination

15. Animals begin their lives as single, diploid cells called:
(a) Embryo (b) Fetus (c) Zygote
(d) Gastrula (e) Larva

16. Stages of an animal's embryonic life: [In order]
(a) Cleavage → Zygote → Blastula → Gastrula → Morula → Organogenesis
(b) Blastula → Gastrula → Cleavage → Morula → Zygote → Organogenesis
(c) Cleavage → Zygote → Gastrula → Morula → Blastula → Organogenesis
(d) Zygote → Cleavage → Gastrula → Blastula → Morula → Organogenesis
(e) Zygote → Cleavage → Morula → Blastula → Gastrula → Organogenesis

17. Series of mitotic cell division, different daughter cells receive different regions of ovum's cytoplasm is:
(a) Fertilization (b) Cleavage (c) Gastrulation (d) Organogenesis (e) Growth

18. Cell divisions, migrations and re-arrangements produce two or three primary tissues or germ layer is:
(a) Fertilization (b) Cleavage (c) Gastrulation (d) Organogenesis (e) Growth

19. Increase In the size of organs to attain maturity is:
(a) Fertilization (b) Cleavage (c) Gastrulation (d) Organogenesis (e) Growth

20. Sub-populations of cells which are sculpted into specialized organs and tissues is:
(a) Fertilization (b) Cleavage (c) Gastrulation
(d) Organogenesis (e) Growth

21. The part of apical meristem which become separated from by permanent tissue called:
(a) Sub-apical meristem (b) Lateral meristem (c) Medial meristem
(d) Intercalary meristem (e) Nodal meristem

22. The egg of bird is of _________type.
(a) Polylecithal (b) Monolecithal (c) Telolecithal
(d) Trilecithal (e) Unilecithal

23. Concerning fertilization in hen, which statement is not correct?
(a) Fertilization is internal in hen
(b) Outside the albumen, there is one shell membrane and hard proteinaceous calcareous membrane is present
(c) The egg is laid 24 hours after the fertilization
(d) Cleavage in hen is of discoidal type
(e) Embryo, which resembles a mulberry and becomes a rounded mass of closely packed blastomeres, is morula

24. In hen, process of development requires the fertilized eggs to be kept at:
(a) 20 °C (b) 28 °C (c) 32 °C (d) 34 °C (e) 37 °C

25. The embryonic stage which contains a fluid-filled "segmentation cavity" is:
(a) Cleavage (b) Morula (c) Blastula (d) Gastrula (e) Zygote

26. The marginal cells of blastoderm lie unseparated from yolk and form zone of junction with central region:
(a) Area - opaca (b) Area pellucid (c) Area - epiblastula
(d) Area- germinate (e) Area- phellogen

27. Rearrangement of cells of the "area pellucida" of blastoderm gives rise to:
(a) Endoderm (b) Mesoderm (c) Sub-Endodam
(d) Ectoderm (e) Sub-Ectoderm

28. Number of cells of epiblast pass through the primitive streak, move laterally into the blastocoel to form a new layer of cells, called:
(a) Endoderm (b) Mesoderm (c) Sub-Endodam
(d) Ectoderm (e) Sub-Ectoderm

29. Ectoderm is formed by the cells of:
(a) Mesoblast (b) Periblast (c) Epiblast (d) Monoblast (e) Uniblast

30. Muscles, axial skeleton and connective tissue arises from:
(a) Mesomeres (b) Metameres (c) Hypomeres
(d) Epimeres (e) Blastomeres

31. The process of formation of neural tube is known as:
(a) Blastrulation (b) Blastulation (c) Neurulation
(d) Neurogenesis (e) Neuro-regulation

32. The process of selection of activation of some genes by a cell, which are not activated by other cells of the embryo Is:
(a) Cell development (b) Cell Growth (c) Cell Division
(d) Cell Differentiation (e) Cell Induction

33. The grey crescent area is present:
(a) Just below to the point of entrance of sperm nucleus in the ovum
(b) Just above to the point of entrance of sperm nucleus in the ovum
(c) Just opposite to the point of entrance of sperm nucleus in the ovum
(d) Just adjacent to the point of entrance of sperm nucleus in the ovum
(e) All statements are incorrect

34. As a result of first cleavage, the zygote divides:
(a) Vertically into two daughter cells (b) Horizontally into two daughter cells
(c) Obliquely Into two daughter cells (d) Vertically into four daughter cells
(e) Horizontally into four daughter cells

35. The process of progressive deterioration in the normal structure and function of tissues is called:
(a) Necrosis (b) Dysgenesis (c) Disfigurement
(d) Apoptosis (e) Aging

36. The outcome of cleavage is due to:
(a) Fertilization (b) Gamete Formation (c) Organogenesis
(d) Cytoplasmic localization (e) Incubation

37. In bryophytes, growth takes place at:
(a) Apices (b) Lateral region (c) Intercalary region
(d) Entire plant body (e) All are incorrect

38. Reconstruction of the lost parts of the body is:
(a) Resuscitation (b) Dysgenesis (c) Regeneration
(d) Maturation (e) Formation

39. The study of abnormalities present during the embryological development is:
(a) Embryology (b) Teratology (c) Tetralogy
(d) Entomology (e) Immunology

40. The egg of chick is laid at this stage:
(a) Zygote (b) Cleavage (c) Morula
(d) Gastrula (e) Blastula

41. Cytoplasmic localization is a consequence of:
(a) Fertilization (b) Cleavage (c) Morula
(d) Gastrula (e) Blastula

42. The blastoderm splits into:
(a) Epiblast and Hypoblast (b) Epimere and Hypomere (c) Mesomere and Epimere
(d) Epiblast and Epimere (e) Hypomere and Mesomere

43. The phenomenon in which one embryonic tissue influences upon the other is:
(a) Morulation (b) Embryonic Induction (c) Neurulation
(d) Cleavage (e) Gastrulation

44. The disorder in which there is excessive number of fingers or toes are present, is called:
(a) Dextrocardia (b) Klinefelter's Syndrome (c) Polydactyly
(d) Tetralogy (e) Down's Syndrome

45. Mental and physical retardation is:
(a) Cleft lip and plate (b) Polydactyly (c) Turner's Syndrome
(d) Klinefelter's Syndrome (e) Down's Syndrome

46. Inability of the blood to clot is:
(a) Hemophilia (b) Thalassemia (c) Sickle Cell Anaemia
(d) Anemia (e) Polycythemia

47. In birds and mammals, regeneration is mostly liniited to the small wounds by the formation of a new tissue, called:
(a) Papules (b) Pustules (c) Scar (d) Scab (e) Nodule

48. The science of aging is known as
(a) Entomology (b) Gerontology (c) Ichthyology
(d) Immunology (e) Dactylography

49. Morula resembles a:
(a) Strawberry (b) Cherry (c) Raspberry
(d) Mulberry (e) None

50. The larval epidermis is formed from:
(a) Clear Cytoplasm (b) Yellow Cytoplasm
(c) Gray Vegetal Cytoplasm (d) Gray Equatorial Cytoplasm

51. In plants elongation of cells is favored by:
(a) Infrared Light (b) Red Light (c) Blue Light (d) Ultraviolet light

52. Cleavage results in the formation of rounded closely packed mass of blastomeres called:
(a) Blastula (b) Morulla (c) Gastrula (d) Neurula

53. Somites are formed and organized by:
(a) Ectoderm (b) Mesoderm (c) Endoderm (d) Blastoderm

CHAPTER NO. 20

CHROMOSOMES AND DNA

1. Darkest colour organelle present in a human cell is:
(a) Mitochondria (b) Chromosomes (c) Ribosomes
(d) Lysosomes (e) Nucleolus

2. Chromosome is a bearer of hereditary characters in the form of:
(a) Spindles (b) Phosphoric acid (c) Ribonucleic acid (d) Histones (e) Genes

3. Cells used which component to make protein:
(a) DNA (b) Nucleus (c) Lysosomes (d) Chromosomes (e) RNA

4. Number of Chromosomes present in a frog:
(a) 2 (b) 6 (c) 14 (d) 26 (e) 28

5. Number of Chromosomes present in Mosquito:
(a) 2 (b) 6 (c) 14 (d) 26 (e) 2

6. Number of Chromosomes present in human is:
(a) 14 (b) 26 (c) 38 (d) 42 (e) 46

7. Number of Chromosomes present in Sugar cane is:
(a) 14 (b) 26 (c) 46 (d) 80 (e) 86

8. Number of Chromosomes present in Fern is:
(a) 260 (b) 500 (c) 750 (d) 1,000 (e) 10,000

9. Number of Chromosomes present in Garden Pea is:
(a) 14 (b) 26 (c) 32 (d) 44 (e) 48

10. Each Chromosome consists of two very thin threads called:
(a) Chromosomes (b) Chromatids (c) Centromere
(d) Chromonema (e) Kinetochores

11. The two chromatids of the same chromosomes re called:
(a) Co-chromatids (b) Daughter chromatids (c) Sister chromatids
(d) Non-sister chromatids (e) Non-daughter chromatids

12. The chromatids of two different chromosomes are called:
(a) Chromonema (b) Daughter chromatids (c) Sister chromatids
(d) Non-sister chromatids (e) Non-daughter chromatids

13. In moths and birds, sex chromosomal pattern in females is:
(a) XX (b) XY (c) ZW (d) ZZ (e) ZX

14. In moths, birds and some fishes, sex chromosomal pattern in males is:
(a) WZ (b) YW (c) XZ (d) ZZ (e) ZW

15. The particular array of chromosomes that an Individual possess is called its:
(a) Karyotype (b) Cytotype (c) Pneumotype
(d) Chromotype (e) Centrotype

16. The most abundant chromosomal proteins are called:
(a) Cytokinins (b) Giberellins (c) Histones
(d) Globulin (e) Albumin

17. Most eukaryotic chromosomes are about:
(a) 20% proteins & 80% DNA (b) 80% DNA & 20% proteins (c) 90% proteins & 10% DNA
(d) 50% proteins & 50% DNA (e) 60% proteins & 40% DNA

18. The chromosome is arranged in ___________ pattern.
(a) Circular(b) Longitudinal
(c) Helical
(d) Oval (e) Vertical

19. Highly condensed portions of the chromatin are called:
(a) Homochromatin (b) Heterochromatin (c) Cytochromatin
(d) Monochromatin (e) Euchromatin

20. Portion of chromatin, which is not condensed except during cell division is:
(a) Hypochromatin (b) Homochromatin (c) Heterochromatin
(d) Euchromatin (e) Epichromatin

21. "DNA is the genetic material in phage, transmitted from one generation to the next" is observed by:
(a) Schielden and shwann (b) Hershey and Chase (c) F. Griffith
(d) Avery, Macleod and McCarty (e) Karis Correns and Walter Sutton

22. "Molecular model of DNA" was suggested by:
(a) Watson and Crick (b) Hershey and Chase (c) F. Griffith
(d) Avery, Macleod and McCarty (e) Correrns and Sutton

23. If the sequence of one chain is 'ATTGCAT", the sequence of its partner in the duplex must be:
(a) TAATGCA (b) TACAGCA (c) TAACGTA
(d) TAAGCAT (e) TAATGTA

24. The two polynucleotide strands of DNA remain separated by distance:
(a) 6 A° (b) 10 A° (c) 15 A° (d) 20 A° (e) 30 A°

25. One complete turn of DNA contains _________ nucleotides.
(a) 2 (b) 5 (c) 10 (d) 15 (e) 20

26. Best present in RNA but not in DNA is:
(a) Adenine (b) Guanine (c) Cytosine (d) Uracil (e) None

27. To specify an amino acid genetic code has __________ bases.
(a) One (b) Two (c) Three (d) Four (e) Five

28. DNA is made of billions of units called:
(a) Nucleosides (b) Histones (c) Chromosomes
(d) Nucleotides (e) Phosphoric Acid Residues

29. Each nucleotide occupies distance along the length of a polynucleotide strand.
(a) 10 A° (b) 20 A° (c) 24 A° (d) 30 A° (e) 15 A°

30. Genetic disorder in which urine containing homogentisic acid and turned black on exposure to air is:
(a) Hemoglobinuria (b) Alkaptonuria (c) Homocystinuria
(d) Proteinuna (e) Phenylketonuria

31. The first stage of gene expression is
(a) Transcription (b) Transformation (c) Translation
(d) Transduction (e) Translocation

32. The second stage of gene expression in which mRNA-directed polypeptide synthesis by ribosomes takes place is:
(a) Transcription (b) Transformation (c) Translation
(d) Transduction (e) Translocation

33. "Start Codon" is:
(a) UAG (b) UAA (c) UGA (d) UGG (e) AUG

34. If a small segment of chromosome may be missing, a situation called:
(a) Deletion (b) Duplication (c) Diversion
(d) Translocation (e) Inversion

35. If a part of chromosome be present in excess to the normal chromosome, a condition called:
(a) Deletion (b) Duplication (c) Diversion
(d) Translocation (e) Inversion

36. The transfer of segment of chromosome to a non-homologous chromosome is called:
(a) Deletion (b) Duplication (c) Transformation
(d) Translocation (e) Inversion

37. Reduce crossing over is present in:
(a) Translocation (b) Inversion (c) Deletion
(d) Duplication (e) Transformation

38. The DNA get damage by all except:
(a) X-rays (b) Gamma rays (c) Free radical
(d) Ultraviolet rays (e) Ultrasonic rays

39. Heritable blood disorder due to presence of defective Hemoglobin molecule is:
(a) Hemophilia (b) Thalassemia (c) Thrombocytopenia
(d) Sickle Cell Anaemia (e) Polycythemia

40. Hereditary condition in which the affected individuals are unable to break down the amino acid phenylanaline is:
(a) Homocystinuria (b) Alkaptonuria (c) Phenylketonuria
(d) Hemoglobinuria (e) Uricosuria

41. Anticodons comprises of:
(a) DNA molecules (b) r-RNA molecules (c) mRNA molecules
(d) t-RNA molecules (e) All are incorrect

42. Codons comprises of:
(a) DNA molecules (b) r-RNA molecules (c) mRNA molecules
(d) t-RNA molecules (e) All are Incorrect

43. Sequence of two bases per amino acid gives possible combinations of bases.
(a) 8 (b) 12 (c) 16 (d) 36 (e) 48

44. Sequence of three bases per amino acid gives possible combinations of bases.
(a) 12 (b) 16 (c) 36 (d) 58 (e) 64

45. "The t-RNA possesses anticodon series for particular amino acid site and binds to mRNA". This phenomenon is known as:
(a) Coding (b) Decoding (c) Recoding
(d) Transcription (e) Translocation

46. Transcription is initiated by a special enzyme, called:
(a) DNA synthetase (b) RNA synthetase (c) DNA polymerase
(d) RNA polymerase (e) Deoxyribonuclease

47. "One gene-one enzyme hypothesis" is proposed by:
(a) Watson and Crick (b) Hershey and Chase (c) Beadle and Tatum
(d) Avely, Maclood & McCarty (e) Correns and Sutton

48. The total genomic constitution of an individual is known as:
(a) Genetics (b) Genome (c) Geriatrics (d) Codons (e) Mutagens

49. Which one of the following is stop signal during transcription?
(a) CA (b) GA (c) GC (d) TA

50. Phenylketonuria is well known example of:
(a) Deletion (b) Inversion (c) Insertion (d) Point mutation

51. In 1882, Chromosomes were first observed by:
(a) John Brown (b) T.H. Morgan (c) Walther Fleming (d) Walter Sutton

52. A gene starts with initiation codon, which encodes the amino acid methionine:
(a) UAA (b) UAG (c) AUG (d) UGG

53. Supporting role in DNA replication process played by an enzyme called:
(a) RNA Polymerase (b) Amino acetyl t-RNA synthetase
(c) DNA polymerase III (d) DNA polymerase I

54. Every 200 nucleotides the DNA duplex is coiled around the core of 8 histone proteins and forms a complex called:
(a) Polysome (b) Heterochromtin (c) Nucleosome (d) Euchromatin

CHAPTER NO. 21

1. "All cells come from the Pre-existing cell", this statement was proposed by:
(a) Michael Schwann (b) F. Griffith (c) Watson & Crick
(d) Hershey & Chase (e) Rudolf Virchow

2. Each round of cell growth and cell-division is called:
(a) Growth Curve (b) Cell Cycle (c) Cell Growth Hypothesis
(d) Maturation Phase (e) One Gene - One Enzyme Hypothesis

3. The non dividing initial phase of the cycle as the interval between two divisions is called:
(a) Interphase (b) Prophase (c) G_0 Phase
(d) G_1 Phase (e) Mitotic Phase

4. Phase of Interphase where no DNA synthesis occurs is:
(a) G_0 (b) G_1 (c) S (d) M (e) None

5. Cells remain visible and metabolically active but do not divide in sub-stage.
(a) G_0 (b) G_1 (c) S (d) M (e) None

6. DNA synthesis takes place in sub-stage.
(a) G_0 (b) G_1 (c) S (d) M (e) None

7. In the cell cycle, the most variable sub-stage is:
(a) G_0 (b) G_1 (c) S (d) M (e) G_2

8. Interphase consists of following sub-stages, the correct sequence is:
(a) G_1, G_2, S (b) S, G_1, G_2 (c) G_1, S, G_2
(d) G_2, S, G_1 (e) S, G_2, G_1

9. Concerning cell division and cell cycle, which statement is incorrect?
(a) After completion of interphase, mitosis is a dynamic period of vigorous activity
(b) Cytokinesis is usually followed by karyokinesis
(c) In early O_2 sub-stage ribosomes are spindle formation
(d) The S sub-stage is followed by G_1 sub-stage
(e) The G sub-stage is followed by G_0 sub-stage

10. Cell-division without the formation of spindle is called:
(a) Amitosis (b) Mitosis (c) Meiosis
(d) Interphase (e) Apoptosis

11. In the amitotic cell division, when the nuclear portions divide more than two in number, the phenomenon is referred to as:
(a) Karyokinesis (b) Karyotyping (c) Nuclear Budding
(d) Nuclear Fragmentation (e) Nuclear Localization

12. In amitotic cell division, when the nuclear portions are unequal in size, the process is generally called:
(a) Karyokinesis (b) Karyolysis (c) Nuclear Budding
(d) Nuclear Localization (e) Nuclear Fragmentation

13. Programmed cell death in which the cell responds to certain signals by initiating a normal response that leads to cell death is:
(a) Cell Induction (b) Necrosis (c) Inflammation
(d) Apoptosis (e) Cellular Dysgenesis

14. Death of living cells that result from ischemic tissue injury is called:
(a) Autophagy (b) Necrosis (c) Inflammation
(d) Apoptosis (e) Amitosis

15. Correct sequence of stages of mitosis:
(a) Prophase → Anaphase → Metaphase → Telophase
(b) Prophase → Metaphase → Anaphase → Telophase
(c) Metaphase → Anaphase → Prophase → Telophase
(d) Telophase → Prophase → Anaphase → Metaphase
(e) Anaphase → Prophase → Telophase → Metaphase

16. Cell carry out self destruction in the absence of survival signals is:
(a) Autophagy (b) Heterophagy (c) Inflammation
(d) Necrosis (e) Apoptosis

17. The nuclear envelop breakdown and a network of microtubules forms between opposite poles of the cell:
(a) Interphase (b) Prophase (c) Metaphase
(d) Anaphase (e) Telophase

18. Short fibers of mitotic apparatus radiating from the centrioles only at poles are called:
(a) Continuous spindle fibres (b) Long spindle fibres (c) Half spindle fibres
(d) Astral fibres (e) Discontinuous spindle fibres

19. Spindle fibres running from pole to pole are called:
(a) Continuous spindle fibres (b) Half spindle fibres (c) Astral fibres
(d) Discontinuous spindle fibres (e) All are incorrect

20. Chromosomes arrange themselves at the equatorial plane of the spindle during:
(a) Interphase (b) Prophase (c) Metaphase
(d) Anaphase (e) Telophase

21. Stage of mitosis characterized by physical separation of sister chromatids is:
(a) Interphase (b) Prophase (c) Metaphase
(d) Anaphase (e) Telophase

22. Stage of mitosis during which the mitosis apparatus assembled and the nuclear envelope is re-established is:
(a) Interphase (b) Prophase (c) Metaphase
(d) Anaphase (e) Telophase

23. In animals, the mitosis is:
(a) Amphi-astral (b) An-astral (c) Uni-astral
(d) Pro-astral (e) Poly-astral

24. In plant cells, the mitosis is:
(a) Amphi-astral (b) An-astral (c) Uni-astral
(d) Pro-astral (e) Poly-astral

25. Mutations of cellular genes that control cell growth and cell mitosis leads to:
(a) Syphilis (b) Leprosy (c) Cancers
(d) Small pox (e) Erythema nodosum

26. The sub-stage initiates meiosis:
(a) Zygotene (b) Diplotene (c) Pachytene
(d) Leptotene (e) Diakinesis

27. Synapsis takes place in sub-stage:
(a) Leptotene (b) Zygotene (c) Pachytene
(d) Diplotene (e) Diakinesis

28. Tetrads formation occur in sub-stage:
(a) Leptotene (b) Zygoene (c) Pachytene
(d) Diplotene (e) Diakinesis

29. Chiasmata formation crossing overtakes place in substage:
(a) Leptotene (b) Zygotene (c) Pachytene
(d) Diplotene (e) Diakinesis

30. Sub-stage characterized by the disappearance of the nuclear membrane, nucleolus and completion of spindle apparatus and separation of bivalents is:
(a) Leptotene (b) Zygotene (c) Pachytene
(d) Diplotene (e) Diakinesis

31. The two sets of chromosomes reach the opposite pole of the cell in:
(a) Leptotene (b) Diplotene (c) Metaphase I
(d) Anaphase I (e) Diakinesis

32. Chromatid becomes “Monad" in:
(a) Telophase I (b) Anaphase I (c) Prophase II
(d) Metaphase II (e) Anaphase II

33. The attachment site on the chromosome for pulling chromosome apart during mitosis is:
(a) Cell Plate (b) Aster (c) Centriole (d) Kinetochore (e) None

34. The failure in the separation of the homologous chromosomes due to meiotic errorknown as:
(a) Non-disjunction (b) Heteroploidy (c) Monoploidy
(d) Polyploidy (e) Aneuploidy

35. A change in an individual in which chromosomes may be added or subtracted is:
(a) Non-disjunction (b) Polyploidy (c) Aneuploidy
(d) Homoploidy (e) Euploidy

36. Klinefelters Syndrome is:
(a) XX (b) XXX (c) XO (d) XYY (e) XXY

37. “Down's Syndrome" is:
(a) Monosomy 18 (b) Monosomy 21 (c) Trisomy 19
(d) Trisomy 21 (e) Trisomy 26

38. "Turner's Syndrome" is:
(a) XX (b) XXX (c) XO (d) XYY (e) XXY

39. A diploid cell contains in its nucleus:
(a) An even number of chromosomes
(b) An odd number of chromosomes
(c) One copy of each homologues
(d) Either an even or an odd number of chromosome
(e) All are incorrect

40. Mitotic apparatus is formed during of cell division.
(a) Interphase (b) Prophase (c) Metaphase
(d) Anaphase (e) Telophase

41. Which one is absent in animal cell:
(a) Spindle (b) Centriole (c) Chromatids (d) Pharagmoplast

42. The syndrome having trisomy of chromosome No. 18 is:
(a) Down's (b) Patau's (c) Edward (d) Jacob's

43. The spindle fibers are composed of RNA and protein called:
(a) Insulin (b) Tubulin (c) Actin (d) Myosin

44. Individuals with Klinefelter syndrome have sex chromosomes as following:
(a) XO (b) XXO (c) XXY (d) XXXY

45. Synapsis starts during:
(a) Leptotene (b) Zygotene (c) Pachytene (d) Diplotene

46. The condensation of chromosomes reaches to its maximum at:
(a) Leptotene (b) Zygotene (c) Pachytene (d) Diakinesis

47. The autosomal non-disjunction in man in which 21st pair of chromosome fails to segregate, resulting in gamete with 24 Chromosome is called:
(a) Down's syndrome (b) Turner's Syndrome
(c) Klinefelter's Syndrome (d) Jacob's Syndrome

CHAPTER NO. 22

VARIATION AND GENETICS

1. Mendel's hereditary factor "genes" are located on:
   (a) Mitochondria (b) Nuclear membrane (c) Chromosomes
   (d) Lysosomes (e) Cytoplasmic membrane

2. Basic units of inheritance are:
   (a) Chromosomes (b) Nucleus (c) Nucleolus (d) Nuclear membrane (e) Genes

3. The total aggregate of genes in a population at any one time is called the populations
   (a) Gene pool (b) Gene target (c) Gene cycle
   (d) Gene square (e) Gene aggregation

4. Genes that occupies a specific position called:
   (a) Alleles (b) Locus (c) Gene pool (d) Linkage (e) Synapsis

5. "Law of Dominance" was derived by:
   (a) T. H. Morgan (b) G. J. Mendel (c) Rudolf Virchow (d) Bateson (e) Lamarck

6. The phenotypic ratio of plants with dominant character to those with recessive character always close to:
   (a) 1:2 (b) 2:1 (c) 1:1 (d) 3:1 (e) 1:3

7. Separation of genes is called.
   (a) Assortment (b) Dominance (c) Segregation
   (d) Inheritance (e) Gene pool

8. “Law of purity of gametes" is:
   (a) Law of Dominance (b) Law of Recessiveness (c) Pleiotropy
   (d) Law of Segregation (e) Law of Independent Assortment

9. "Each gamete contains only one allele of a particular character and is said to be pure", this
   (a) Pleiotropy (b) Epistasis (c) Law of Segregation
   (d) Law of Dominance (e) Law of Independent Assortment

10. "The members of one pair of genes segregate independently of the other pairs", this is:
    (a) Law of independent Assortment (b) Pleiotropy (c) Law of Segregation
    (d) Law of Dominance (e) Epistasis

11. Mendel perform his famous experiments of heredity on:
    (a) Bean plants (b) Castor plant (c) Garden pea (d) Mirabilis plant (e) Maize

12. Cross fertilization of a phenotypically dominant individual with a homozygous recessive individual is:
    (a) Incomplete dominance (b) Test cross (c) Co-dominance
    (d) Epistasis (e) None

13. Incomplete dominance is also known as:
    (a) Primary Inheritance (b) Secondary Inheritance (c) Intermediate nheritance
    (d) Independent inheritance (e) Dependent Inheritance

14. "None of the two genes is dominant over the other", this phenomenon is:
(a) Test Cross (b) Co-dominance (c) Incomplete dominance
(d) Epistasis (e) Pleiotropy

15. Both alleles of a contrasting character are dominant and express themselves in heterozygous individuals neither masking the effect of one another, this is:
(a) Test Cross (b) Phenomenon of Inheritance (c) Co dominance
(d) Law of Segregation (e) Law of Independent Assortment

16. A gene for a trait having three or more allelic forms is called __________ alleles.
(a) Recessive (b) Unilocular (c) Multiple alleles (d) Double (e) Single

17. A well known example of multiple alleles in human beings is that of the:
(a) Skin colour (b) Height (c) Flair texture
(d) Blood groups (e) Rhesus factor

18. Cross appearance of intermediate character is known as:
(a) Co dominance (b) Incomplete dominance (c) Epistasis
(d) Test cross (e) Pleiotropy

19. Blood group, also known as "'Universal Donor" is
(a) Blood group A^+ (b) Blood group O^+ (c) Blood group B^+
(d) Blood group AB^+ (e) Blood group B^-

20. Blood group also known as "Universal Recipient" is:
(a) Blood group A^+ (b) Blood group O^+ (c) Blood group B^+
(d) Blood group AB^+ (e) Blood group B^-

21. Each human being possesses ______________ pairs of chromosomes.
(a) 21 (b) 22 (c) 23 (d) 24 (e) 26

22. "R^h" stands for:
(a) Rhesus Factor (b) Rhesus Gene (c) Rhesus Pool
(d) Rhesus Heamatin (e) Rhesus Type.

23. When a colour blind male marries a normal female:
(a) All the sons, will be normal & daughter colour blind
(b) All sons are colour blind & daughters normal but carriers
(c) All the daughters will be colour blinds & sons normal but carriers
(d) All the sons and daughters will be colour blind
(e) All the sons and daughters will be normal

24. In Erythroblastosis foctalis:
(a) Mother is R^h positive and father R^h negative (b) Mother and father both are R^h negative
(c) Father is R^h positive and mother R^h negative (d) Mother and father both are R^h positive
(e) Mother and father are both R^h positive but grandparents are R^h negative

25. Suppressive influence of any genetic factor on another that is not its allele is:
(a) Epistasis (b) Co dominance (c) Incomplete Dominance
(d) Test Cross (e) Pleiotropy

26. Traits that are controlled by two or more than two separate pairs of genes, which manifest themselves in an additive fashion to yield continuously varying traits, this is:
(a) Epistasis (b) Pleiotropy (c) Polygenic Inheritance
(d) Intermediate Inheritance (e) Co-dominance

27. The multiple effects of a single gene or allele are termed:
(a) Epistasis (b) Pleiotropy (c) Co dominance
(d) Test Cross (e) Polygenic Inheritance

28. Pairs of chromosomes found in Drosophila:
(a) Two (b) Three (c) Four (d) Five (e) Six

29. The tendency of genes in a chromosome to remain together is called:
(a) Linkage (b) Synapsis (c) Pleiotropy
(d) Crossing over (e) Hybridization

30. During meiosis, the homologous chromosomes come together and form pairs, a process called:
(a) Linkage (b) Synapsis (c) Pleiotropy
(d) Crossing over (e) Epistasis

31. Mutual exchange of segments of chromosomes is called:
(a) Linkage (b) Synapsis (c) Pleiotropy
(d) Crossing over (e) Epistasis

32. Number of chromosomes present in Male Grasshopper:
(a) 16 (b) 20 (c) 23 (d) 24 (e) 26

33. Number of Autosomes present in humans:
(a) 38 (b) 40 (c) 42 (d) 44 (e) 46

34. The human female possesses a genotype of:
(a) 40 + XY (b) 40 + XX (c) 42 + XX (d) 43 + XX (e) 44 + XY

35. The human male possesses a genotype of:
(a) 40 + XY (b) 40 + XX (c) 44 + XY (d) 42 + XY (e) 46 + XY

36. Any genetic trait which is transmitted through sex chromosomes is called:
(a) Single Trait Inheritance (b) Sex Linked Inheritance (c) Intermediate Inheritance
(d) Inheritance of Two Traits (e) Autosomal Inheritance

37. Sex determination in Drosophila was done by:
(a) T. H. Morgan (b) Rudolf Virchow (c) Bateson
(d) Gregor John Mendel (e) Matthew Mesclson

38. Acquiring of information about the phenotypes of family members to infer the genetic nature of a trait from the pattern of its inheritance is:
(a) Maternal analysis (b) Paternal analysis (c) Pedigree analysis
(d) Chromosomal analysis (e) Genes analysis

39. Persons suffering from colour blindness hae difficulty in distinguishing:
(a) Blue from green (b) Red from blue (c) Yellow from Orange
(d) Red from Yellow (e) Red from Green

40. Regarding colour blindness, “when a normal male marries carrier female", which is the correct statement?
(a) All daughter will be colour blind
(b) All sons will be colour blind
(c) All daughters are normal but carriers
(d) Half of the sons will be colour blind
(e) Half of the daughter will be colour blind

41. Diabetes Mellitus is caused by a deficiency of:
(a) Cortisone (b) Glucagon (c) Thyroid (d) Aldosterone (e) Insulin

42. Type II Diabetes Mellitus usually occurs after about age:
(a) 20 (b) 30 (c) 40 (d) 50 (e) 60

43. The result obtained from mono hybrid cross is spoken as
(a) Test Cross (b) Intermediate Inheritance (c) Inheritance of two traits
(d) Single trait inheritance (e) Co-dominance

44. When red-eyed female (XRXR) is cross with white eyed male (X'Y) the F2 generation showsred-eyed & white-eyed, this is ratio of:
(a) 4:1 (b) 1:1 (c) 1:3 (d) 2:1 (e) 3:1

45. Locus is a:
(a) Part of DNA (b) Position of gene (c) Partner of gene (d) Complement of gene

46. A genome is a full set of genes of:
(a) a cell (b) a tissue (c) an individual (d) a population

47. Full set of genes of an individual is called ______.
(a) gene pool (b) Genome (c) Phenotype (d) Genotype

48. The genic system of determination of sex is present in:
(a) Gingko (b) Yeast (c) Drosophila (d) Protenor bug

49. The individual which are universal recipients have blood group:
(a) A (b) B (c) AB (d) O

50. ABO blood group system was first discovered in 1901 by:
(a) Punnet (b) Wiener (c) Bernstein (d) Landsteiner

51. Bobbed gene in Drosophila is present in:
(a) X Chromosome (b) Y Chromosome (c) Both on X and Y (d) Autosome

52. Novel phenotype of 4' O clock plant flower is an example of:
(a) Complete Dominance (b) Incomplete Dominance
(c) Co dominance (d) Over Dominance

53. The blood serum containing antibodies is called:
(a) Antigen (b) Immunoglobulin (c) Plasma (d) Antisera

CHAPTER NO. 23

BIOTECHNOLOGY

1. Rules to explain "the phenomenon of inheritance of biological characteristics" was formulated by:
(a) T. H. Morgan (b) G. J. Mendel (c) Rudolf Virchow (d) Bateson (e) Lamarck

2. Genetic research was activated and a revolution in modern biology occurred in the year:
(a) 1951-53 (b) 1961-63 (c) 1971-73 (d) 1975-71 (e) 1981-83

3. Genetic engineering usually utilizes cells and plasmids of:
(a) Bacteria (b) Viruses (c) Algae (d) Fungi (e) Parasites

4. "rDNA" is:
(a) Ribosomal DNA (b) Riorazion DNA (c) Resolution DNA
(d) Regenerate DNA (e) Recombinant DNA

5. DNA molecule into which a gene is inserted to construct a recombinant DNA molecule is:
(a) Activator (b) Initiator (c) Accelerator (d) Starter (e) Vector

6. Concerning "PLASMIDS, which statement is correct:
(a) They are small, chromosomal circular DNA molecules.
(b) They are found in some bacteria and viruses.
(c) They can replicate independent of the host cell chromosome.
(d) Plasmids do not carry any genes which are responsible for useful characteristics.
(e) We cannot insert foreign (required) gene into plasmids to prepare recombinant DNA molecules.

7. Enzymes which are required to cut a source DNA molecule into small pieces and to cut plasmid to make a gap where foreign DNA fits into it are:
(a) DNA Ugase Enzyme (b) Constructive Enzyme (c) Recombinant Enzyme
(d) Restriction Enzyme (e) Regenerator Enzyme

8. The enzyme used to seal the DNA Is:
(a) Restriction Enzyme (b) Ligase (c) Polymerase
(d) Reductase (e) Regenerator Enzymes

9. The enzymes that act like scissors in recombinant DNA technology are:
(a) Restriction Enzymes (b) Ligase (c) Polymerase
(d) Reductase (e) Regenerator Enzymes

10. Restriction Enzymes were discovered in:
(a) 1940s (b) 1950s (c) 1960s (d) 1970s (e) 1980s

11. Each restriction enzyme cuts DNA at a specific site, called:
(a) Cut ends (b) Sticky ends (c) Ligating ends
(d) Recombination ends (e) Gliding ends

12. Now a days, insulin can be synthesized by genetically engineered bacteria:
(a) Salmonella typhi (b) Pseudomonas aurigonase (c) Shigella sortnei
(d) Bacteriodes fragilis (e) Escherichia coli

13. An organic compound used to make a sweetener by some genetically engineered bacteria:
(a) Phenyltryptamine (b) Phenylanaline (c) Ketone bodies
(d) Diacylglycerol (e) Peroxidase

14. The only plasmid for transgenic plant cells is:
(a) Gr-plasmid (b) Sc-plasmid (c) Ti-plasmid
(d) Pr-plasmid (e) Nc-plasmid

15. The first transgenic fruit approved is:
(a) Water Melon (b) Pomegranate (c) Mango (d) Tomato (e) Apple

16. To increase the CO_2 fixation property, molecular scientists are working to enhance the efficiency of:
(a) Ribulose biphosphate (b) Ribulose bicarbonate (c) Ribulose bicitrate
(d) Ribulose bisulphate (e) Ribulose reductase

17. Human lactoferrin is a protein that is involved in _______ transport and has antibacterial activity.
(a) Potassium (b) Iron (c) Sulphur (d) Copper (e) Calcium

18. The synthesis of complementary DNA (cDNA) on mRNA template is the:
(a) Reverse translation (b) Dihybridization (c) Reverse transcription
(d) DNA ligation (e) DNA polymerization

19. In Eukaryotic gene cloning, the synthesis of cDNA on mRNA template is being catalyzed by an enzyme:
(a) DNA polymerase (b) RNA polymerase (c) DNA ligase
(d) Reverse polymerase (e) Reverse transcriptase

20. In Eukaryotic gene cloning, the synthesis of cDNA on mRNA is catalyzed by "Reverse transcriptase" obtained from:
(a) Retroviruses (b) Reoviruses (c) Rhabdoviruses
(d) Bunyaviruses (e) Paramyxovirus

21. A method of determining nucleotide sequence of a gene developed in late 1970s by:
(a) T. H. Morgan (b) G. J. Mendel (c) Rudolf Virchow (d) F. Singer (e) Lamarck

22. DNA fragments differing as much as one nucleotide than each other can separate by:
(a) Get diffusion method (b) Polymerase chain reaction (c) Gel electrophoresis
(d) DNA hybridization (e) Dark field microscopy

23. The differences in DNA electrophoresis patterns among individuals are called:
(a) Promoters Fragments Length Isomorphism (IFLI)
(b) Enhancer Restriction Length Polymorphism (ERLP)
(c) Restriction Fragments Length Polymorphism (RFLP)
(d) Controller Fragment Length Isomorphism (CFLI)
(e) All are incorrect

24. Human Genome Project (HPG) began in:
(a) 1930(b) 1940(c) 1960 (d) 1980(e) 1990

25. Chromosomal abnormality includes:
(a) Down's syndrome (b) Parkinson's disease (c) Huntington's disease
(d) Cystic Fibrosis (e) Asthma

26. Unifactorial defect includes:
(a) Down's Syndrome (b) Turner's Syndrome (c) Asthma
(d) Cystic Fibrosis (e) Insulin Dependent Diabetes Mellitus

27. Multifactorial disorder includes:
(a) Down’s Syndrome (b) Kilnefelter's Syndrome (c) Asthma
(d) Hungtington's Disease (e) Cystic Fibrosis

28. Hungtington's disease is due to an autosomal dominant allele on chromosome no:
(a) 2 (b) 4 (c) 6 (d) 8 (e) 14

29. Regarding Hungtington's disease, which statement Is not correct?
(a) It is due to an autosonial dominant allele
(b) The affected individuals are almost heterozygous for the defective gene
(c) Appearance of symptoms is usually earlier in the age of $2O_2$
(d) Involuntary muscle movement is present along with progressive mental deterioration
(e) There is no any treatment of the disease

30. "Cystic Fibrosis" is a disease of:
(a) Heart (b) Liver (c) Kidneys (d) Lung (e) Brain

31. The first illness likely to be treated by gene therapy is:
(a) Sudden Infant Death Syndrome (b) Auto Immunodeficiency Disease
(c) Acquired Immunodeficiency Syndrome (d) Static Immunodeficiency Disease
(e) Combined Immunodeficiency disease

32. In Combined Immunodeficiency Disease, the cells of the bone marrow cannot produce an enzyme called:
(a) DNA polymerase (b) DNA ligase (c) Reverse Transcriptase
(d) Adenosine Deaminase (e) Adenosine Transaminase

33. Small amount of amniotic fluid is withdrawn from the amniotic sac for diagnostic purpose is:
(a) Amniography (b) Amnio-rhesus (c) Amniocentesis
(d) Polymerase Chain Reaction (e) Western Blot Analysis

34. Multifactorial defects refers to:
(a) One gene (b) Chromosomal abnormality (c) Many genes
(d) Many genes and environmental factors (e) None

35. If the sequence of nucleotides on mRNA template is "AUCGUA", then the sequence of newly synthesized DNA strand would:
(a) UAGCAU (b) AUCGAU (c) UCGUA (d) TAGCAT (e) None

36. Production of duplicate copies of genetic material, cells or entire multi-cellular living organisms occurs naturally in environment is:
(a) Polymerase Chain Reaction (b) Western Blot Analysis (c) DNA Hybridization
(d) Immunochromatography (e) Cloning

37. A technique to separate molecules on the basis of their size, shape and rate of movement is:
(a) Electrophoresis (b) Eastern Blot Analysis (c) Genomic Library
(d) Human Genome Project (e) Gene therapy

38. Some human DNA does not code for proteins and repeated frequently, it is called:
(a) DNA hybridization (b) Human Genome Project (c) Gene therapy
(d) DNA Finger printing (e) Genomic library

39. Culture of preferred genes carrying vectors of a species in a preferred environmental is called:
(a) DNA hybridization (b) Human Genome Project (c) Gene therapy
(d) DNA Finger Printing (e) Genomic library

40. The recombinant DNA technology leads us into the major growing industry, the:
(a) Bio-physics (b) Biotechnology (c) Biochemistry
(d) Biomechanics (e) Biostatics

41. The first restriction enzyme was isolated by:
(a) Kary Mullis (b) Hamilton (c) Sanger (d) Maxum

42. The enzyme luciferase produce by an insect called:
(a) Housefly (b) Firefly (c) Butterfly (d) Tsetse fly

43. Polyhydroxy butyrate is called:
(a) Antithrombin III (b) Neutra sweet (c) Luciferin (d) Biodegradable plastic

44. A balloon catheter is used in the treatment of:
(a) SCID (b) Closed Artery (c) Cystic fibrosis (d) Hypercholesteromia

45. Commonly used restriction enzyme is:
(a) Plasmid (b) p SC 101 (c) p BR 322 (d) ECO R_1

CHAPTER NO. 24

EVOLUTION

1. Gradual development of something is:
(a) Existence (b) Ecosystem (c) Evolution
(d) Natural Selection (e) Revolution

2. It is believed that life may have begun deep in the water especially in hot spring called:
(a) Hydrothermal vent (b) Epidermal vent (c) Hypothermal vent
(d) Hydropressure vent (e) All are correct

3. Theory of organic evolution based on the principle of "Use and disuse of organ" is now considered as:
(a) Survival of the fittest (b) Theory of Natural Selection (c) Inheritance of two traits
(d) Theory of origin of species (e) Inheritance of acquired characters

4. "Small changes through successive generations promote the origin of new organs or characters, which are transmitted to its offspring in the next generation". This is called:
(a) Survival of the fittest (b) Theory of Natural Selection (c) Inheritance of two traits
(d) Theory of origin of species (e) Inheritance of acquired characters

5. Lamarck's theory was strongly opposed criticized and rejected by:
(a) Weismann (b) T. H. Morgan (c) Zimmermann (d) G. J. Mendel (e) Darwin

6. Lamarck's theory based on following points except:
(a) Effects of environment (b) Use and disuse of organs (c) Natural Selection
(d) Inheritance of acquired characters (e) Evolution of giraffe to support evolution theory

7. Cells which differentiate into various tissues and form different organs of the body are:
(a) Epithelial cells (b) Germ cells (c) Ectodermal cells
(d) Somatic cells (e) All are incorrect

8. Cells remain undifferentiated, which later on give rise to egg cells or sperm cells are:
(a) Epithelial cells (b) Germ cells (c) Ectodermal cells
(d) Somatic cells (e) Endodermal cells

9. "Theory of Natural Selection" was proposed by:
(a) Charles Darwin (b) Weismann (c) T. H. Morgan (d) G. J. Mendel (e) Lamarck

10. Darwin's theory based on following points except:
(a) Over production (b) Struggle for existence (c) Variations and Heredity
(d) Survival of the fittest (e) Inheritance of Acquired Characters

11. "A logical result of over production is the severe competition for food and space and other necessities of life", what Darwin called the:
(a) Over production (b) Struggle for existence (c) Variations and Heredity
(d) Survival of the fittest (e) Inheritance of Acquired Characters

12. Struggle between the individuals of same species having similar needs is:
(a) Inter specific struggle (b) Sub-specific struggle (c) Intra specific struggle
(d) Environmental struggle (e) Occupational struggle

13. Struggle among the members of different species is:
(a) Inter specific struggle (b) Sub-specific struggle (c) Intra specific struggle
(d) Environmental struggle (e) Occupational struggle

14. Struggle against the extreme forces of nature is:
(a) Inter specific struggle (b) Sub-specific struggle (c) Intra specific struggle
(d) Environmental struggle (e) Occupational struggle

15. Darwin's theory based on following points except:
(a) Formation of new species (b) Struggle for existence (c) Variations and Heredity
(d) Use and disuse of organs (e) Survival of the fittest

16. The theory of organic evolution given by Charles Darwin in:
(a) 1759 (b) 1766 (c) 1819 (d) 1834 (e) 1859

17. De Varies is known for his:
(a) Evolution Theory (b) Mutation Theory (c) Revolution Theory
(d) Selection Theory (e) Theory of Variation

18. "Germinal Continuity Theory" was proposed by:
(a) Hutton (b) Lamarck (c) Weismann (d) T. H. Morgan (e) Darwin

19. A branch of biology in which various organisms showing resemblances have been classified is called:
(a) Histology (b) Entomology (c) Toxicology (d) Taxonomy (e) Anatomy

20. Archaeopteryx was a fossil:
(a) Snake (b) Bird (c) Crocodile (d) Fish (e) Monkey

21. From evolutionary point of view birds come from:
(a) Echinoderms (b) Sponges (c) Reptiles (d) Amphibians (e) Mammals

22. Study of different species show close resemblance in their anatomy is:
(a) Homology (b) Heterology (c) Enzymology (d) Ichthyology (e) Cytology

23. Tail bone which is vestigial in man but well-developed in other vertebrates is:
(a) Femur (b) Radius (c) Ischium (d) Sacrum (e) Coccyx

24. Vermiform Appendix in man is a small finger-like reduced :
(a) Ileum (b) Rectum (c) Colon (d) Duodenum (e) Caecum

25. Membrane well-developed in birth to clean their eye-ball but highly reduced, folded & non-functional in man is:
(a) Conjunctival membrane (b) Nictitating membrane (c) Corneal membrane
(d) Cribriform membrane (e) Pleural membrane

26. Artificial selection in breeding provides evidence for evolution is:
(a) Revolution (b) Insemination (c) Domestication
(d) Degeneration (e) Deterioration

27. Kind of selection maintains the constancy of species over generation is:
(a) Solitary selection (b) Artificial selection (c) Stabilizing selection
(d) Domestication (e) Genetic selection

28. A more or less genetically isolated unit of population is known as:
(a) Deme (b) Beme (c) Heme (d) Mene (e) Zeme

29. The genetic constitution of a deme is known as:
(a) Gene population (b) Gene store (c) Gene accumulation
(d) Gene pool (e) Gene set point

30. A branch of genetics that deals with the frequency, distribution and inheritance of alleles in population is:
(a) Allelic genetics (b) Inherited genetics (c) Population genetics
(d) Evolutionary genetics (e) Distributory genetics

31. "Under stable conditions allelic frequencies and their genotype ratios remain constant generation after generation", this is:
(a) Lamarck's Inheritance of Acquired Characters (b) Weismann's Germinal Continuity Theory
(c) Hardy Weinberg Law of Equilibrium (d) Darwin's Theory of Organic Evolution
(e) De Varies Mutation Theory

32. Tests of blood sera have shown the relationship between Man and:
(a) Goat (b) Sheep (c) Cats (d) Bears (e) Apes

33. Muscles found vestigial in man:
(a) Eye muscles (b) Fingers muscles (c) Nose muscles
(d) Ear muscles (e) Scalp muscles

34. "A process in which the fittest of an organism in its environment selects those traits that will be passed on with greater frequency from one generation to the next" is:
(a) Theory of Acquired Inheritance (b) Theory of Origin of Species
(c) Theory of Natural Selection (d) Mutation Theory
(e) Hardy Weinberg Law of Equilibrium

35. The main reason for extinction of species is:
(a) Population (b) Over production (c) Parasitism (d) Habitat Destruction

36. In a population that is in Hardy Weinberg Equilibrium, 16% individuals show the recessive trait. What is the frequency of the dominant allele in the population?
(a) 0.48 (b) 0.36 (c) 0.84 (d) 0.4

37. Wallace developed the theory of natural selection essentially identical to:
(a) Lamarck (b) Linnaeus (c) Darwin (d) Hutton

38. According to endosymbiont hypothesis the aerobic bacteria is developed into:
(a) Ribosomes (b) Lysosomes (c) Mitochondria (d) Golgi apparatus

39. Essay on the principle of population was published by:
(a) Darwin (b) Wallace (c) Linnaeus (d) Malthus

40. Endosymbiont hypothesis was supported by:
(a) Cuvier (b) Lyell (c) Margulis (d) Malthus

41. Armadillos the Armored mammals live only in:
(a) Europe (b) America (c) Australia (d) Asia

CHAPTER NO. 25

ECOSYSTEM

1. The scientific study of various relationships of living things to each other and with their environment is:
(a) Homology (b) Entomology (c) Ecology (d) Ichthyology (e) Cytology

2. The ecology is usually referred as:
(a) Environmental Biology (b) Occupational Biology (c) Population Biology
(d) Biotechnology (e) Biomechanics

3. The group of similar individuals that live together in the same area at the same time from a:
(a) Ecosystem (b) Population (c) Community (d) Environment (e) Habitat

4. All populations living in a particular area form:
(a) Ecosystem (b) Community (c) Environment (d) Biosphere (e) Habitat

5. Regarding ecological levels of organization, which statement is correct?
(a) Population → Ecosystem → Community → Biosphere
(b) Ecosystem → Population → Community → Biosphere
(c) Population → Ecosystem → Biosphere → Community
(d) Ecosystem → Biosphere → Community → Population
(e) Population → Community -→ Ecosystem → Biosphere

6. A collective term for all conditions in which an organism lives is:
(a) Ecosystem (b) Community (c) Environment (d) Biosphere (e) Habitat

7. The type of environment in which a particular organism or population lives, is its:
(a) Ecosystem (b) Community (c) Population (d) Biosphere (e) Habitat

8. The biogeographical regions are further differentiated on the basis of complex interaction of climate and biotic factors into large easily recognizable community units called:
(a) Ecosphere (b) Biosphere (c) Environment (d) Biomes (e) Habitat

9. Study of population approach of individual species is:
(a) Autocoids (b) Entomology (c) Ichthyology (d) Autecology (e) Ecology

10. The study of different communities, their relation between them and their environment is called:
(a) Entomology (b) Synecology (c) Autecology
(d) Gynaecology (e) Biotechnology

11. "Earth" is an example of:
(a) Population (b) Community (c) Ecosystem (d) Biosphere (e) Habitat

12. The term "Ecosystem" was first used by:
(a) T. H. Morgan (b) G. J. Mendel (c) Lamarck (d) Charles Darwin (e) Tansely

13. Structural and functional unit of a community, which shows relationship between flow of energy and cycling of matter, is:
(a) Ecosphere (b) Ecosystem (c) Biosphere (d) Environment (e) Habitat

14. The chlorophyll absorbs only ___________ colours to utilize in photosynthesis.
(a) Yellow and orange (b) Red and green (c) Violet and blue
(d) Orange and red (e) Red and blue

15. In nature, continuous cycling of water is called:
(a) Hydrological cycle (b) Hydrophobic cycle (c) Hydrophilic cycle
(d) Hydrothermal cycle (e) Hydrolysis

16. The visible light is a small part of Electromagnetic spectrum, which ranges from __________ millimicrons.
(a) 400 - 780 (b) 450 - 600 (c) 500 - 850 (d) 300 - 690 (e) 400 - 760

17. Plants require shade to grow are:
(a) Heliophytes (b) Thermophytes (c) Sciophytes
(d) Thallophytes (e) Xerophytes

18. Plants require light to grow are:
(a) Dermophytes (b) Heliophytes (c) Sciophytes
(d) Thallophytes (e) Xerophytes

19. The concentration of oxygen in atmosphere is above:
(a) 21% (b) 50% (c) 30% (d) 60% (e) 75%

20. The fungi whose growth is favoured by fire are known as:
(a) Pyrothermal fungi (b) Pyrohydral fungi (c) Pyrophilus fungi
(d) Pyrothecal fungi (e) Pyrophobic fungi

21. The study of surface texture is termed as:
(a) Taxonomy (b) Topography (c) Entomology
(d) Tomography (e) Ichthyology

22. Higher altitudes are associated with:
(A) Low Temperature, Low Pressure, Low Wind Velocity
(B) Low Temperature, High Pressure, High Wind Velocity
(C) High Temperature, Low Pressure, Low Wind Velocity
(D) Low Temperature, Low Pressure, High Wind Velocity
(E) High Temperature, High Pressure, High Wind Velocity

23. Factors pertaining to conditions and composition of soil are termed as:
(a) Climatic Factors (b) Edaphic Factors (c) Topographic Factors
(d) Facility Factors (e) Atmospheric Factors

24. Scientific study of soil is called:
(a) Entomology (b) Pediatrics (c) Pedology (d) Demology (e) Topology

25. Biotic component of Ecosystem includes:
(a) Light (b) Autotrophs (c) Temperature (d) Water (e) Wind

26. Zooplanktons and crustaceans are:
(a) Producers (b) Decomposers (c) Primary consumers
(d) Secondary consumers (e) Tertiary consumers

27. Example of producer is:
(a) Zooplankton (b) Eagles (c) Grass-hopper (d) Redwood tree (e) Fish

28. Animals feed upon mixed diet of plants and animals are:
(a) Autotrophs (b) Herbivores (c) Saprotrophs
(d) Omnivores (e) Carnivores

29. In recycling of materials, the important rote is played by:
(a) Producers (b) Primary consumers (c) Secondary consumers
(d) Tertiary consumers (e) Decomposers

30. Air contains________ % of nitrogen.
(a) 30 (b) 50 (c) 65 (d) 73 (e) 78

31. An association in which one organism lives temporarily or permanently within or another organism called host is:
(a) Parasitism (b) Mutualism (c) Predation (d) Commensalism (e) Grazing

32. The relationship in which organism gets benefit from host, but host does not get benefit nor it harmed is:
(a) Parasitism (b) Mutualism (c) Predation (d) Commensalism (e) Grazing

33. Example of parasites include:
(a) Actinomycetes (b) Histoplasma capsutatum (c) Coccidiodes immitis
(d) Yersinia pestis (e) Taenia saginata

34. The relationship of Hydrictinia and Hermit Crab is called:
(a) Mutualism (b) Commensalism (c) Parasitism (d) Predation (e) All

35. The term "succession” was first used by Hult in year;
(a) 1971 (b) 1900 (c) 1885 (d) 1965 (e) 1977

36. The process of orderly community change is called:
(a) Interaction (b) Succession (c) Revolution (d) Association (e) Predation

37. Succession occurs in an area when adequate moisture is present is called:
(a) Hydrosere (b) Thermosere (c) Phytosere (d) Mesosere (e) Xerosere

38. The stable and mature community of a climate is called:
(a) Successors (b) Xerosere (c) Biosphere (d) Mesosere (e) Climax

39. Xerosere includes:
(a) Wood land stage (b) Reed swarm stage (c) Submerged stage
(d) Sedge meadow stage (e) Crustose lichen stage

40. All are included in Xerosere except:
(a) Foliose lichen stage (b) Shrub stage (c) Moss stage
(d) Herb stage (e) Wood land stage

41. "Selaginella" is included in:
(a) Crustose lichen stage (b) Moss stage (c) Herbs stage
(d) Shrub stage (e) Climax stage

42. "Hydrilla" is included in:
(a) Phytoplankton stage (b) Floating stage (c) Submerged stage
(d) Moss stage (e) Herb stage

43. An association between fungus and algae is an example of: ______
(a) Parasitism (b) Mycorrhiza (c) Lichens (d) Commensalism

44. The green photosynthetic plants that capture and bring light energy into ecosystem are:
(a) Scavengers (b) Decomposers (c) Consumers (d) Producers

45. A change in community structure of an ecosystem over a period of time is called:
(a) Niche (b) Pioneer (c) Succession (d) Unstable ecosystem

46. Who proposed the term Niche?
(a) Haeckel (b) Grinnell (c) Linnaeus (d) Lamarck

47. In ecosystem, second trophic level consists of _____
(a) Producers (b) Primary Consumers
(c) Secondary Consumers (d) Tertiary Consumers

CHAPTER NO. 26

SOME MAJOR ECOSYSTEMS

1. The producers of a pond ecosystem are:
(a) Bacteria (b) Zooplankton (c) Phytoplankton (d) Viruses (e) Fungi

2. Primary consumer of a pond ecosystem are:
(a) Diving beetles (b) Phytoplankton (c) Zooplanktons (d) Aspergillus (e) Turtle

3. Secondary consumer of a pond ecosystem is:
(a) Diving beetles (b) Phytoplankton (c) Turtle (d) Aspergillus flavus (e) Molluscs

4. Tertiary consumer of a pond ecosystem is:
(a) Diving beetles (b) Carnivore fish (c) Aspergillus flavus (d) Zooplankton (e) Turtle

5. Decomposers of pond ecosystem are:
(a) Phytoplankton (b) Zooplanktons (c) Carnivore fishes (d) Aspergillus flavus (e) Turtles

6. The sea below 2000 meters is called _________ zone.
(a) Euphotic (b) Pelagic (c) Bathyal (d) Benthic (e) Abyssal

7. The salt concentration of sea is generally:
(a) 3.5% (b) 5.0% (c) 4.6% (d) 4.0% (e) 6.5%

8. The most productive zone of the sea is:
(a) Oceanic (b) Necritic (c) Benthic (d) Pelagic (e) Abyssal

9. Onchophora is a new phyla, it interlink between:
(a) Annelida and Mollusca (b) Echinodermata and Arthropoda (c) Annelida and Arthropoda
(d) Mollusca and Mammalia (e) Annelida and Echinodennata

10. The maximum temperature in tundra do not exceeds:
(a) 10 °C (b) 20 °C (c) 25 °C (d) 30 °C (e) 35 °C

11. Deserts occupy about of land surface of the earth.
(a) 5% (b) 8% (c) 10% (d) 12% (e) 17%

12. Largest desert found in earth is:
(a) Gobi (b) Sahara (c) Thar (d) Cholistan (e) Thal

13. In desert ecosystem, producers are mostly:
(a) Thallophytic (b) Heliophytic (c) Xerophytic
(d) Sciophytic (e) Halophytic

14. In winter, the temperature of tundra reaches upto:
(a) -5 °C (b) -10 °C (c) -20 °C (d) -48 °C (e) -57 °C

15. The frozen sub-soil of tundra is termed as:
(a) Sub frost (b) Perma frost (c) Tundra frost (d) Apical frost (e) Pro frost

16. In tropical rain forest, rainfall is heavy and annual average temperature is about:
(a) 18 °C (b) 20 °C (c) 28 °C (d) 35 °C (e) 40 °C

17. The term "deciduous" is applied to those plants, which shed off their leaves during season:
(a) Winter (b) Autumn (c) Summer (d) Spring (e) Rainfall

18. Grassland covers about of earth's surface.
(a) 3% (b) 5% (c) 12% (d) 15% (e) 19%

19. The term "savannah" is applied to:
(a) Temperate Deciduous Forest (b) Coniferous Forest (c) Tropical Grass Lands
(d) Tropical Rain Forest (e) Desert Ecosystem

20. Lands where evaporation exceeds rainfall is:
(a) Temperate Deciduous Forest (b) Tropical Grass Lands (c) Tundra
(d) Tropical Rain Forest (e) Desert

21. Temperature of Savannah generally ranges throughout the year.
(a) 15 °C (b) 12 °C (c) 18 °C (d) 30 °C (e) 45 °C

22. Coldest desert of the world found in:
(a) North Africa (b) Magnolia (c) Australia (d) Central Asia (e) America

23. The recognizable unit of habitat is called:
(a) Ecosystem (b) Ecosphere (c) Biosphere (d) Biome (e) Savannah

24. "Perma forest" is a characteristic feature of:
(a) Temperate Deciduous Forest (b) Coniferous Forest (c) Tundra
(d) Savannah (e) Deserts

25. "Ever green plants" are characteristic features of:
(a) Tropical rain forest (b) Tundra (c) Deciduous forest
(d) Coniferous forest (e) Savannah

26. Grass land become are known as __________ basket of the world.
(a) Grass (b) Flower (c) Green (d) Beautiful (e) Bread

27. In grass land biomes, the rainfall usually between:
(a) 25 - 75 cm (b) 150 -200 cm (c) 100 -125 cm (d) 125 -150 cm (e) < 24 cm

28. Macronutrient present as abiotic component in pond ecosystem is:
(a) Copper (b) Manganese (c) Magnesium (d) Iron (e) Zinc

29. All are micronutrients present as abiotic component in point ecosystem except:
(a) Carbon (b) Sulphur (c) Potassium (d) Magnesium (e) Iron

30. The plants of intertidal zone possess a jelly like substance called:
(a) Chitin (b) Cellulose (c) Agar (d) Yolk (e) Gel

31. The ocean covers ________ % earth surface.
(a) 25 (b) 35 (c) 50 (d) 70 (e) 5

32. Soil of grassland contains large amount of:
(a) Sand (b) Clay (c) Loam (d) Silt (e) Humus

33. The plants in deserts:
(a) Broad Leaves (b) Short Rooted (c) Conserve Water (d) Remain Ever Green

34. Savannas are grassland in:
(a) Temperate Region (b) Tropical Region (c) Arctic Region (d) Alpine Region

35. The zone where enough light penetrates to support photosynthesis:
(a) Littoral (b) Limnetic (c) Profundel (d) Benthic

36. Limnetic phytoplankton includes the:
(a) Bacteria (b) Algae (c) Mosses (d) Cyanobacteria

37. Crustaceans with a spiny projection on these plank tonic creatures help to keep them from sinking:
(a) Porpoise (b) Whale (c) Copepod (d) Bobcat

38. A succulent plant has water stored in tissues:
(a) Cacti (b) Moss (c) Yarrow (d) Spruce

39. Chillas has major terrestrial ecosystem called:
(a) Deciduous forests (b) Alpine forests (c) Tundra (d) Grassland

40. In Sindh, the desert ecosystem is called:
(a) Thal (b) Sahara (c) Thar (d) Cholistan

CHAPTER NO. 27

MAN AND HIS ENVIRONMENT

1. Percentage of Carbon present in air is:
(a) 78% (b) 50% (c) 0.03% (d) 0.001% (e) 0.1%

2. Non-Renewable reserves includes all except:
(a) Oil (b) Coal (c) Metals (d) Natural Gas (e) Soil

3. Renewable Resource includes:
(a) Air (b) Natural Gas (c) Coal (d) Metals (e) Oil

4. Of the total water of the world ________ is in the ocean.
(a) 10% (b) 25% (c) 50% (d) 75% (e) 93%

5. Most of the atmospheric water vapours come from:
(a) River (b) Sea (c) Lakes
(d) Moist soils (e) Transpiring vegetations

6. Renewable source of Energy includes:
(a) Petroleum (b) Falling water (c) Tar (d) Nuclear Fuels (e) Coal

7. Non-renewable source of energy includes all except:
(a) Nuclear fuels (b) Petroleum (c) Oil shales (d) Wind (e) Coal

8. All are renewable resources of energy except:
(a) Oil Shales (b) Ocean Currents (c) Wind
(d) Plant Materials (e) Temperature Gradients

9. Common cancer induced by radiation is:
(a) Renal Cell Carcinoma (b) Stomach Cancer (c) Pancreatic Cancer
(d) Thyroid Cancer (e) Hepatocellular Carcinoma

10. In a nuclear reaction 1 kg of nuclear fuel releasing as heat.
(a) 12 kJ (b) 50 kJ (c) 79 kJ (d) 85 kJ (e) 98 kJ

11. New plantation is:
(a) Eforestation (b) Aforestation (c) Deforestation
(d) Neoforestation (e) Euforestation

12. Stationary combustion plants and transport vehicles burn fuel at very high temperature and produces:
(a) CO_2 (b) NO (c) SO_2 (d) O_2 (e) CO

13. Ozone is:
(a) O_3 (b) O_7 (c) O_5 (d) C_2O (e) $C_6H_2O_6$

14. A major source of chlorine is an industrially produced group of gases called:
(a) Chloro-plosgene (b) Chioronitrate (c) Chlorofloro-carbon
(d) Chloroacetate (e) Chlorocitrate

15. According to decibel scale, noise above decibels is considered as loud.
(a) 20 (b) 40 (c) 60 (d) 80 (e) 90

16. Chicken pox is caused by __________ virus.
(a) Cytomegalo (b) Varicella-zoster (c) Herpes Simplex (d) Influenza (e) HIV

17. Pneumonia is _______ disease.
(a) Bacterial (b) Nutritional (c) Fungal (d) Protozoal (e) Viral

18. "Typhoid fever" is caused by __________ virus.
(a) Varicella-zoster (b) Salmonella typhi (c) Shigella Soneli (d) Rabies virus (e) None

19. Rabies is transmitted through:
(a) Humans (b) Mosquitoes (c) Dogs (d) Sheeps (e) Cats

20. Athelete's foot is:
(a) Taenia versicolor (b) Taenia soluim (c) Taenia saginata
(d) Taenia corporis (e) Taenia pedis

21. Ring worm of body is caused by:
(a) Plasmodium spp. (b) Trypanosoma spp. (c) Streptococcus
(d) Varicella-zoster virus (e) Dermatophytes

22. "African sleeping sickness" is _______ disease.
(a) Bacterial (b) Parasitic (c) Fungal (d) Protozoal (e) Viral

23. "Cholera" is _______ disease.
(a) Bacterial (b) Nutritional (c) Parasitic (d) Protozoal (e) Viral

24. "Trypanosomiasis" is transmitted through bite of infected:
(a) Mangoe fly (b) Culiesta mosquito (c) Culex mosquito (d) Tsetse fly (e) Sand fly

25. Hydatid disease is due to:
(a) Taenia saginata (b) Echinococcus granulosus (c) Taenia sodium
(d) Enterobius vermilcularis (e) Ascaris lumbricoides

26. Beri-Beri is due to deficiency of vitamin:
(a) B_1 (b) B_6 (c) B_2 (d) D (e) K

27. Deficiency of Vitamin "D" causes:
(a) Night Blindness (b) Ben-Ben (c) Scurvy (d) Rickets (e) Anemia

28. “Leishmaniasis" is transmitted through bite of Injected:
(a) Mangoe fly (b) Culiesta mosquito (c) Culex mosquito (d) Tsetse fly (e) Sand fly

29. Prolong bleeding is due to deficiency of vitamins:
(a) A (b) B (c) C (d) D (e) K

30. Deficiency of fluorine causes:
(a) Anemia (b) Prolong bleeding (c) Tooth decay (d) Goitre (e) Albinism

31. Deficiency of iron causes:
(a) Haemophilia (b) Prolong bleeding (c) Tooth decay (d) Goitre (e) Anemia

32. Haemophilia is due to deficiency of a blood protein-factor
(a) II (b) IV (c) VI (d) VIII (e) X

33. Aging associated disease is:
(a) Tuberculosis (b) Scurvy (c) Osteoarthritis (d) Sickle Cell Anemia (e) AIDS

34. Alzheimer's disease is associated with:
(a) Aging (b) Malnutrition (c) Tungus (d) Fungus (e) Parasite

35. Abnormal haemoglobin causes:
(a) Megaloblastic Anemia (b) Sickle Cell Anemia (c) Haemophilia
(d) Albinism (e) Asthma

36. Anemia is due to the deficiency of vitamin:
(a) A (b) B (c) C (d) D (e) E

37. Influenza is transmitted through:
(a) Air-borne droplets (b) Sexual contact (c) Bite from infected dog
(d) Water contamination (e) Sharing hypodermic needles

38. Goitre is due to deficiency of:
(a) Sodium (b) Iodine (c) Fluorine (d) Potassium (e) Iron

39. Which is not a micronutrient?
(a) Zinc (b) Iron (c) Sulphur (d) Iodine

40. The percentage of land under cultivation:
(a) 30% (b) 21% (c) 11% (d) 15%

41. Lung cancer is due to:
(a) CFCs (b) Sulfur dioxide (c) Oxides of Nitrogen (d) Carbon Monoxide

42. Ozone molecule is formed by the fusion of three atoms of:
(a) Carbon (b) Hydrogen (c) Nitrogen (d) Oxygen

43. Only 30% of Earth is:
(a) Land (b) Freshwater (c) Marine Water (d) Mountains

44. It is not fossilized fuel:
(a) Lignite (b) Peat (c) Natural gas (d) Oil

45. Which one is involved in destruction of ozone molecules in ozone layer?
(a) Sulphur (b) Lead (c) Carbon Monoxide (d) Chloride

46. Stone monuments like TAJ MEHAL are being eroded due to “stone cancer” by _____________.
(a) Acid Rain (b) Radiation (c) Eutrophication (d) Green House Effect